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MASTER'S THESIS

Environmental Refugees, the XXI Century Imperative Challenge

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Proposed Topic:

Environmental Refugees, the XXI century imperative challenge

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Topic Characteristics:

My thesis will focus on environmental refugees – those displaced by development programs and by climate change. Even if there are different opinions and studies done on climate change, including those who believe all of it is part of an hysteria (such as the Czech President Vaclav Klaus), the world is now getting aware of the real seriousness of the climate change and the consequent environmental problems. Since many decades, however, some countries are suffering from natural resources scarcity, inundations, droughts, soil erosion, deforestation, desertification, water deficit and hunger. The victims of these environmental harms are millions of people who die from hunger, who have to leave their homes either to search for a soil where to build new crops or to a town searching for more resources to survive. Moreover, there are millions being displaced as a consequence of governmental development projects. However, the international community is not giving enough importance to these people, to the 3 billion who suffer from water scarcity, to the 4 million which are displaced yearly due to development projects, to the over 250 million people directly affected by desertification (nor to the one billion at risk).[1] Millions of victims who have to leave their home in order to survive, either to other regions in their countries, or to other countries. All these people are considered by some scholars as environmental refugees; however, there is no official international recognition to consider these victims of environmental problems as such. Only the victims of natural disasters are considered as such, but the phenomenon is much broader than this. The current international refugee tool, *1951 Convention and the 1967 Protocol Relating to the Status of Refugees*, does not protect environmental refugees, thus in this thesis I am going to challenge the international conventional definition of a refugee and to present possible recommendations: or shall people be left inside their borders starving to death? However, this aspect alone would not tackle the problem. Governments and international organizations should change many of their security policies. Or shall security be only a military one? Will missiles, airplanes and bombs defend the millions climate change victims?

[1] http://www.fao.org/desertification/default.asp?lang=en

Working hypotheses:

1. There is an increasing displacement of people caused by climate change and development programs
2. Such displacements generally decrease the living standards of refugees and have long-terms negative consequences to the society in inflicted countries.
3. On top of it the damages spill over to negative international externalities including security instability - thus an international action is unavoidable.
4. There 1951 Refugee Convention is outdated and no longer protects all types of refugees
5. To help mitigating the consequences of climate change, governments and international organizations have to work together to develop international tools which will be crucial to have an ecological suitable growth

Methodology:

In order to being able to defend or reject these hypotheses, the methodology used will be based on statistical data analysis and two case studies. Furthermore I would like to research in depth the different serious environmental problems and policies which are making millions of environmental refugees. A case study on Bangladesh will be done, a country which faces many threats, where many people are at risk of becoming environmental refugees. Moreover, to have a counter example, the small-scale rehabilitation plan in Eritrea will be analyzed and evaluated to see if it could be considered as a possible example for other countries. This country, after being devastated by war, after 1995 it tried to emphasize on peasant agriculture, redistributing land so that farmers can protect their soil. Thus the government, with the aid of international organizations, intended to mitigate the consequences of future droughts and consequent famine by irrigation and soil protection projects.[2]

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[2] Kane, Hal. *The Hour of departure: forces that create refugees and migrants*. 1995

References / Bibliography: (to be updated)

Blowers, A. 1996. *Environmental problems as conflicts of interest*. [pdf] Available at: JSTOR
Carlier, J.-Y. 1997 *Europe and refugees: a challenge?* [e-book] Available at: http://books.google.com/books?id=syXEf8iuKZsC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false [Accessed 8 November 2008]

Constanza, R. and Jorgensen, S. E. 2002. *Understanding and solving environmental problems in the 21st century*: *toward a new integrated hard problem science*. [e-book] Available at: http://books.google.com/books?id=BliR2Q9cm30C&pg=PA1&lpg=PA1&dq=Constanza,+Robert+and+Jorgensen,+Sven+Erik.+Understanding+and+solving+environmental+problems+in+the+21st+century:+toward+a+new+integrated+hard+problem+science.+2002&source=bl&ots=imE5Ja2-sp&sig=uqbSJ_JcOJuTii_1iEz1ei3UJZY&hl=en&sa=X&ei=GY2LT52KIOfk0QGn3tzeCQ&ved=0CCEQ6AEwAA#v=onepage&q&f=false [Accessed 8 November 2008]

Cutts, M. 2000. *The state of the world's refugees 2000: fifty years of humanitarian action.* [pdf] http://www.unhcr.org/cgibin/texis/vtx/home/opendocPDFViewer.html?docid=3ebf9bb8e&query=the%20state%20of%20the%20world%20refugees [Accessed 8 November 2008]

Eden Foundation. 1994. http://www.eden-foundation.org/project/desertif.html [Accessed 4 November 2008]

Essed, P. 2004 *Refugees and the Transformation of Societies: Agency, Policies, Ethics and Politics*. [e-book] http://books.google.com/books/about/Refugees_and_the_transformation_of_socie.html?id=Ixn_D2mhxyAC [Accessed 10 November 2008]

Food and Agriculture Organization of the United Nations http://www.fao.org/desertification/default.asp?lang=en [Accessed 15 November 2008]

Gardner, G. T. 1996 *Environmental problems and human behavior*. s.l. s.n.

Gibney M. 2004. *The Ethics and Politics of asylum: liberal democracy and the response to refugees*. [e-book] http://books.google.com/books?id=fdyhjrmpqx0C&printsec=frontcover&dq=Gibney+Matthew+J.+The+Ethics+and+Politics+of+asylum:+liberal+democracy+and+the+response+to+refugees.+2004&hl=en&sa=X&ei=D6KMT8uSFIHz0gHWxJWzCQ&ved=0CDIQ6AEwAA#v=onepage&q=Gibney%20Matthew%20J.%20The%20Ethics%20and%20Politics%20of%20asylum%3A%20liberal%20democracy%20and%20the%20response%20to%20refugees.%202004&f=false [Accessed 10 November 2008]

Hovy, B. 2002 *Refugees, asylum-seekers and other persons of concern – trends in displacement, protection and solutions*. s.l. s.n
International Organization for Migration.
http://www.iom.int/jahia/Jahia/pid/8/ServletSearchPublication?typPublication=101&keyWord=&author=&classPublication=162&Publication=&datePublication=0&search=Search&reference=&resultPerPage=25&event=search

Klaus, V. 2008. *Blue Planet in Green Shackles: What Is Endangered: Climate or Freedom?* 2nd ed. s.l. Competitive Enterprise Institute.

The Center for Women, the Earth, the Divine. 2007. http://www.cwed.org/Summer2007.htm [Accessed 2 November 2008]

The Office of the United Nations High Commissioner for Refugees. 2006. *The state of the world's refugees 2006: human displacement in the new millennium.* Oxford University Press

UNEP International Environmental Technology Centre. 1998. *Source book of alternative for freshwater augmentation in some Asian countries.*

UNHCR 2001. *UNHCR at 50: past, present and future of refugee assistance*. New York: Center for Migration Studies of New York.
Westra L. 2009. *Environmental Justice and the Rights of Ecological Refugees.* s.l. Routledge

Zolberg, A. and Benda, P. 2001. *Global migrants, global refugees: problems and solutions.*
http://books.google.com/books?id=WLV4etjNfmwC&pg=PA372&lpg=PA372&dq=Zolberg,+Aristide+R.+and+Benda,+Peter.+Global+migrants,+global+refugees:+problems+and+solutions.+2001&source=bl&ots=MtSpKolYCx&sig=e5XJe_uihPFoG7jzbOc9WVqutL8&hl=en&sa=X&ei=bKSMT9udJILt0gHF1aG2CQ&ved=0CDQQ6AEwAQ#v=onepage&q=Zolberg%2C%20Aristide%20R.%20and%20Benda%2C%20Peter.%20Global%20migrants%2C%20global%20refugees%3A%20problems%20and%20solutions.%202001&f=false
http://www.dehai.org/conflict/goe/icc/icc_120800.htm [Accessed 2 November 2008]

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DECLARATION:

I hereby declare that this thesis is my own work, based on the sources and literature listed in the appended bibliography. The thesis as submitted is 157,212 keystrokes long (including spaces), i.e.73 manuscript pages.

Marisa Alves Pereira	MAP	07.01.2013
Your name	Your signature	Date

Abstract

There are new challenges, facing the 21st century and one of them is the discussion around climate change and global warming. This phenomenon brings with it a deeper problem, which is the fact that millions of people have their lives strongly damaged as a consequence of the climate changes. There is no international instrument that protects these climate victims, which in this thesis are referred to as environmental refuges. This thesis focused on trying to evaluate solutions to the problem of environmental refugees. To achieve this we first had a look at the different types of forced migration since it would define which type of solution would suit this type of refugees the best. We had a look at the "Oustees" which are the people who are forced to move due to development projects in the different countries. Then we had a look at Bangladesh as one of the case studies since it is one of the countries at higher risk of suffering the adverse consequences of climate change, which forces many people to move internally or to cross the border to India. We were able to conclude that cross border migration increases tensions between countries and between social groups of the receiving communities. Since these people need protection and since these types of tensions threaten peace and security in some countries we had the need to have a look at The 1951 Convention to see if this instrument could in any way protect these types of refugees. Not only is this instrument outdated but we also realized that the definition of refugee cannot be interpreted in a way that it would protect environmental refugees. We then had a look at other major international instruments, however the conclusion is that there is no "one fits all" or an "easy" solution for the problem since we have "oustees", IDPs and international refugees that can fall into the category of environmental refuges. Having no instrument protecting these people governments play a crucial role to protect its people, protect its environment and to guarantee basic human rights to its citizens. We also had a look at the role of international organizations since their role is fundamental in helping people and governments in finding the best ways to address the problem and to adapt to the new realities. In this regard we presented a second case study as counter example to Bangladesh and finally. We wanted to evaluate if the attempts made by the young Eritrean government had helped people adapting better to the environmental and ecological problems that the country faces. Nevertheless the outcome was that both governments are unable to protect its people and that there is instability because of scarce resource. We finally got to the conclusion that the problem of environmental refugees is far from having a solution in sight since the idea of having a new type of migrants is not attractive for most of the international community. We were able to conclude that even if a healthy environment is a public good its value does not seem to be enough to unlock the Prisoner's Dilemma sub-optimal outcome. Countries use all resources without making a true commitment to reduce emotions and protect environmental refugees. Keeping the current trend of global "tragedy of the commons", the welfare of humanity could be undermined. The only solution to avoid it is collective action.

“Biodiversity, the incredible variety of life on Earth that sustains us, is in peril. Species are becoming extinct at the fastest rate ever recorded. Most of these extinctions are tied to human activities that are polluting and depleting water resources, changing and degrading habitats and altering the global climate. From frogs to gorillas, from huge plants to tiny insects, thousands of species are in jeopardy.”

Ban Kin-moon, 2010

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1. Introduction

The 21st century faces a new challenge. For several decades, scientists have tried to discover the root causes behind global warming and what it will mean for mankind. There are many different opinions among scientists on whether global warming is caused by humans or if it is part of the natural earth climate cycles. Even though there is no agreement on what is causing the increase in temperature, the phenomena exists, and there is evidence of a slow temperature rise year after year over the last few decades. According to the latest report from the World Meteorological Organization (WMO), the last eleven years (from 2001-2011) were the warmest in years on record (WMO, 2012). World scientists have not agreed on the causes of the increase in temperature; there is no agreement among politicians on if the governments should tackle this problem, and there is even one president that says that environmentalism is more dangerous than communism (Klaus, 2008). Nevertheless, this thesis is not going to enter this debate and rather focus on climatic impacts on the environment, which are real what-so-ever are the causes, and the people who are victims of those. Nevertheless, I presume in the whole of this thesis that climatic change is a phenomenon, which we can observe and whose consequences are more serious than it used to be in the last 200 years.

Continents such as Europe, currently view climate change as its most serious problem after poverty (European Parliament, 2008). On the other side of the Atlantic, the American president, Barack Obama, has on his agenda the fight against global warming and the need for a deployment of several parties of the society to search for renewable energy sources. Overall, governments and citizens are aware that climate change is happening, and with global warming comes more than a few degree raise in temperature. It will mean soil erosion, floods, droughts, higher food prices, drinking water scarcity and more starving humans. Hence, more people will have to search for a new shelter, for a new place to survive, thus the number of displaced people in search of fertile land and a new safe place to live will increase drastically. There are conservative and more alarmist predictions, but there is agreement among the scholars working on climate induced migration that climate change will force people to move.

Furthermore, climate change will also have a stronger affect on developing countries. They are now not allowed to develop as quickly as the developed countries once could due to the

fact that the international community is forcing restrictions that pressure these countries to slow down development. Thus poor countries will have limited resources to offer better shelter and living conditions to its citizens and will not be able to find solutions to fight hunger or water scarcity as these get aggravated as the environmental degradation increases. Therefore, people from those countries affected will migrate to the western world or to urban areas within their countries, which may increase urban pollution and cause even more environmental problems from overcrowding, clashes and tensions. These tensions will threaten peace in some poorer countries where there is a bigger lack of resources already. Hence, protecting the environment, building an international "environmental security" approach should be an effort made by the international community if a healthy environment and ecosystem are considered a collective good for the whole humanity. In this regard, the question that we will try to answer is if there is the hope for international collaboration or if the logic of Prisoner's Dilemma[3] will prevail.

In this paper we will have a look at climate change, at its consequences to the environment, to states and how it affects populations which have a higher vulnerability. The core of this thesis is to have a closer look at climate and development induced migration. We will challenge the international conventional definition of refugee, evaluate the effectiveness of The 1951 Refugee Convention to the Status of Refugees (1951 Convention) in today's world, evaluate the role and responsibility of the international community and to present recommendations for the following possible outcomes; shall people be left inside their borders starving to death? Shall security be only a military one and will missiles, airplanes and bombs defend the millions climate change victims? Shall trade and development come before basic human rights? Shall we just watch how the environment gets destroyed and not prepare for the impacts?

[3] The Prisoner's Dilemma is about the outcomes to two actors that follow from the decisions that each one of them makes on whether to cooperate with the other.

1.1 Hypothesis

In order to analyze the climate and development induced migration and in order to try to find solutions which could help protecting these people, this thesis will consider five hypotheses as assumptions:

1. ***There is an increasing displacement of people caused by the climatic factor and development programs which are meant to mitigate the emissions of polluters***

There are two types of climate change related disasters: natural sudden-onset disasters (like cyclones, tsunamis, floods) and slow-onset disasters (like droughts, soil erosion, sea level rise). Both these types of disasters affect the agriculture which on the other hand puts in danger food security in developing countries in the upcoming decades. As a consequence millions of people will suffer from hunger and malnutrition, while others have to leave their homes either in search of soil to grow new crops, or move to a new town in an effort to survive. Moreover, millions of people are being displaced as a consequence of governmental development projects, the so called Oustees[4]. There development projects are criticized among scholars not only for the forcing people to be uprooted but as well for the damages that they cause to the environment. This thesis will call this group of people "environmental refugees" (the reason for this choice will be explained later in this paper). However there is no official international recognition to consider these victims of environmental problems as such. The victims of natural disasters have some protection and there are guidelines on how to deal with such situations, but the phenomenon is much broader than this.

2. ***Such displacements generally decrease the living standards of refugees and have long-terms negative consequences to the society in inflicted countries.***

The international community is not giving enough importance to these people. There are 3 billion who suffer from water scarcity, 15 million which are displaced yearly due to development projects, and over 250 million people directly affected by desertification (nor to the

[4] The term "Oustee" originated in the Indian literature on the involuntary population displacement. The term is usually used to describe people "ousted" from their habitat through government intervention, generally for the intention of some development-required change in land or water use. (Mehta and Gupte, 2003)

one billion at risk) (FAO, 2002)[5]. All these people who will flee these hardships to different areas (inside or outside the borders of their countries) and the people displaced by the development projects have their livelihoods impacted and struggle with adaptation.

3. ***On top of it the damages spill over to negative international externalities among countries including their security instability - thus an international action is unavoidable.***

In this international dimension of the phenomena, the one with the greatest tendency is the South-North international migration. However environmental refugees many times just cross to the neighbouring country which is usually affected by climate change as well, hence causing potential clashes between the receiving community and the newly arrived refugees. There are different opinions about the clashes that this type of migration can cause, and it is very hard to prove empirically that those clashes or tensions are a result of climate change. Nevertheless we will try to conclude if this hypothesis can be considered correct. For this purpose we will have a look at the new term of "environmental security" and what are the current patterns of behavior of the international community.

4. ***The 1951 Refugee Convention is outdated, not responding to changing conditions in the world and no longer protecting all types of refugees***

People displaced by environmental reasons are not included in The 1951 Convention nor in the 1967 Protocol Relating to the Status of Refugees (will be referred as The 1967 Protocol), which consider a refugee a person who "*owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and*

[5] The paper *Challenges and Opportunities for The World Summit on Sustainable Development: FAO'S Perspective* was prepared by the Food and Agriculture Organization of the United Nations (FAO) as a contribution to the World Summit on Sustainable Development which took place in Johannesburg (August 2002).

being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it." (UNHCR, 2010)

The 1967 Protocol was added to The 1951 Convention which had a time limitation as a consequence of the Second World War to protect the European refugees victims of the events occurred before the 1st January 1951. Thus The 1967 Protocol abolished the time limitation since people were facing life threats all over the world. Moreover, there are regional instruments concerning refugees in several continents so that other aspects of the different realities and threats are taken into account.[6] Therefore, there have been some additional instruments and changes made to the original 1951 Convention according to the new and different needs in time or in different regions. In the 21st Century as the environmental problems, global warming, rising of sea level, soil erosion, deforestation are a real fact and threat to many millions of people, the current definition of "refugee" in the 1951 Convention does not protect these people.

5. To help mitigating the consequences of climate change, governments and international organizations have to work together to develop international tools which will be crucial to have an ecological suitable growth

A healthy ecosystem and environment is crucial for the preservation of all the living being on earth and for guarantying the basic human rights to people. Minimizing human-induced changes to the environment is crucial to prevent the adverse consequences to current and future generation. In this regard, the international community and international organizations have been aware of climate change for decades. In 1992 a conference organized by the United Nations (UN), the United Nations Conference on Environment and Development took place in Rio de Janeiro, Brazil. The purpose then was to negotiate on a strategy to limiting the emissions of Carbon Dioxide (CO2). Twenty years later and many climate conferences in between, there was another climate meeting which took place in Rio de Janeiro, Brazil: The United Nations Conference on Sustainable Development. The international community is becoming more aware

[6] There are regional instruments such as the "Organization of African Unity (OAU) Convention Governing the Specific Aspects of the Refugee Problems in Africa" (OAU 1969 Refugee Convention) adopted by African States in 1969, or the "Cartagena Declaration on Refugees, Colloquium on the International Protection of Refugees in Central America, Mexico and Panama" (Cartagena Declaration on Refugees) adopted in 1984.

of the increasing need to consider environmental refugees, who not only displaced within their national boundaries, but who are also moving to other countries with increasing frequency, thus creating a need for greater international awareness. Governments, international organizations, scholars, scientists, they all have to come together to help mitigate all the negative consequences related to climate change. We will have a closer look if this assumption can be defended and why a collective action has failed so far.

1.2 Methodology

There is no agreement on what defines an environmental refugee since many factors will play a role before people are forced to leave their homes. Since it is a topic which his hard to tackle with empirical analysis, in order to defend or reject the hypotheses, the methodology used will be a blend of quantitative and qualitative analysis based on two case studies, the detailed analysis of international legal instruments and some statistical data analysis. This will include in depth research into the different detrimental environmental problems and policies which are creating millions of environmental refugees. A case study on Bangladesh, a country which faces many threats, will illustrate these consequences and how many citizens of Bangladesh are at risk of becoming environmental refugees. Besides its geographical position which makes it a very delicate country regarding the sea level rising threat, it faces major environmental problems such as poor environmental policy, contamination of drinking water, desertification of large parts of the country due to construction of dams and barrages upstream in India, air pollution, pollution of rivers and the destruction of forests (BEN, n.d.). As a counter example to Bangladesh, Eritrea will serve as an example of country where a small-scale rehabilitation plan was implemented. Eritrea's government, with the aid of the international community, after being devastated by war in 1995, tried to emphasize peasant agriculture and redistribution of land so that farmers could protect their soil (Kane, 1995). In this thesis, we will analyze if it worked and if it could be used as an example and implemented in other countries.

Thus, after having a quick overview of the climate change consequences to the environment, after analyzing the international problem of environmental refugees and “Oustees”, with consideration of the Bangladesh case study and a closer look at the validity of the 1951 Convention and the 1967 Protocol regarding the current world threats, an analysis will be made

on what the behavior and role of the international community and the national governments should be to counter all of the effects of global warming on the international community. After these different analyses a conclusion and suggestions will be made.

1.4 Resources

For the past many decades many scholars and scientists have been trying to get answers to the climate change phenomenon. In 2007 when the topic of this thesis was first approved, there were still limited publications about climate induced migration, nevertheless the issue has now been tackled by all the major scholars, scientific institutes and organizations whose focus is climate change and the related socio-economic and environmental impacts. The sources which I have used in this thesis in order to present graphs, statistics and data about climate change and its impacts were publications and researches made by the Food and Agriculture Organization (FAO), the World Meteorological Organization (WMO), the United Nations and several of the UN agencies, the International Institute for Applied Systems Analysis (IIASA) – where leading scientists, such as Günther Fischer, Mahendra Shah and Harrij van Velthuizen, research the critical issues of global environment - and publications made by The Intergovernmental Panel on Climate Change (IPCC) which is the leading international body for the assessment of climate change. In order to know the voice of the critics of the climate change phenomenon, one of the resources used was the book published by the Czech president, Vaclav Klaus, *Blue Planet in Green Shackles – What is Endangered: Climate or Freedom.*

As we move to the topic of climate and induced migration, we use the data from the UN Refugee Agency, or officially known as The Office of the United Nations High Commissioner for Refugees (UNHCR) which is dealing with refugees since it was established in December 1950. Nevertheless the climate induced migration does not have a formal international designation yet, since that would mean taking real actions to tackle the problem, hence we have a look at the analysis made by Dr. James Morrissey about the international debate on environmental refugees. Dr. Morrissey is a Research Officer at the Refugee Studies Centre, Department of International Development at the University of Oxford. With the help of his work we will see how the international debate around climate migration evolved and why this thesis decides to adopt the term "environmental refugees". Nevertheless, there is another type of

migration that is sometimes forgotten amidst the debate, which are the people moved by the development programs around the world, those same programs which are supposed to help the economy and the environment of countries. The focus will be on constructions of dams and displaced people by those major projects. World Bank is the sponsor of most of these projects and throughout the past decades some of the researchers and scientists working for the World Bank have done years of study to come up with better solutions for the resettlement of the people who are forcibly uprooted from their homes. One of those researchers is Michael Cernea who joined the World Bank in 1974 as its first in-house social scientist. His major contribution to the bank was to define the bank's resettlement policies and to develop the Impoverishment Risk and Reconstruction (IRR) Model. Another source which helps evaluating further the needs and rights of refugees, and development displaced people is a work published by the Development Research Center on Migration, Globalization and Poverty, by Lyla Mehta and Jaideep Gupte. These types of migration and displacements are potentially connected with the conflicts in certain areas of certain countries and in order to be able to accept or reject hypothesis 3, we used as source some publications made by the Journal of Peace Research. However, these linkages made by some of these scholars and researchers are not enough to make a decision around hypothesis 3, so the case study around Bangladesh helps better making the conclusion about the mentioned hypothesis. For this purpose we use the sources available from the Asian Development Bank, from the Bangladesh Environmental Network and from the International Organization for Migration (IOM).

In order to help accept and reject the rest of the hypotheses made in this thesis we will have a look at other authors who focus on the environmental refugees and environmental justice such as the work by Laura Westra, a Professor Emerita at the University of Windsor, who in 2009 published the book *Environmental Justice & The Rights of Ecological Refugees*. We also had a look at the book *Climate Change, Forced Migration, and International Law*, published by the Oxford University Press, written by Jane Mcadam, an expert in international refugee law. Mcadam also edited the book *Climate Change and Displacement, Multidisciplinary Perspective*, which brings together a variety of disciplinary perspectives written by leading scholars in their field. Another important book used for purposes of analyzing the failure of international collective action was *The Logic of Collective Action: public goods in the Theor of Groups*, by

Mancur Olson, a leading American economist and social scientist. Finally we also used several articles published by major scholars which were found in JSTOR, a digital library which contains digitalized academic journals.

2. Climate Change, Development and resulting Migration

In this chapter we will have a look at the most significant climate change consequences which affect the environment and the international society. One of the most pressing consequences is the climate induced migration, a problem which is gaining significant importance and urgency in the international community. In the past couple of decades there is a noticeable increase in concern among governments, international organizations, scholars and scientists. We will have a look at how the debate started, at the problems faced by this type of migration and at the other type of forced displacement – the development induced migration. In this regard we will have a closer look at the people displaced by the hydropower projects (the construction of dams) and the consequences to those forcibly uprooted from their homes. In order to evaluate both climate and development induced migration we will have a closer look at Bangladesh, one of the case studies chosen. Hence, in this chapter we will be able to accept or reject hypothesis 1, 2 and 3.

2.1 Climate change and its consequences

This work does not aim to enter the discussion around the causes of climate change, environmental degradation or global warming. This is a very controversial topic which has scientists, politicians and scholars agreeing and disagreeing on what the causes are and how to tackle them. Nevertheless, while they try to agree on the causes, on future predictions and on mitigation solutions, there are millions of people who cannot wait for several decades until the international community comes to an agreement on whom to blame on environment degradation and climate change.

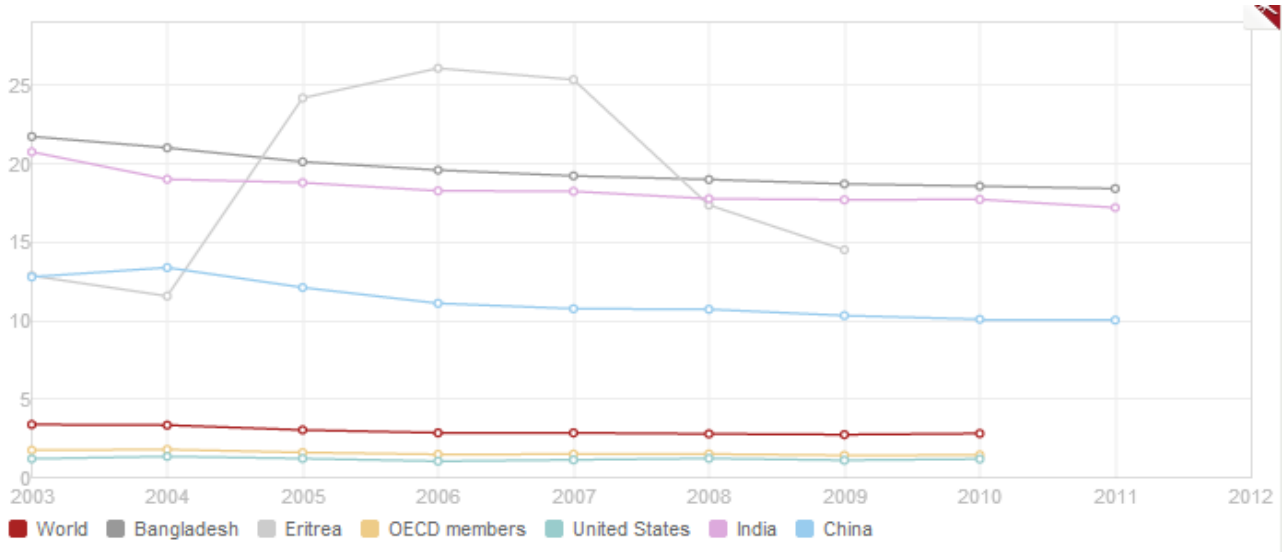
For the past centuries industrialization and development – globalization - have had their toll on the environment. Deforestation, the emission of greenhouse gases and manufacturing are among the causes mentioned to have caused the rising in global temperatures and the consequent disasters to the environment. Nevertheless, there is still an on-going international debate on whether climate change has been man made or if it part of the earth cycle. As mentioned earlier, we will not enter that discussion, but as we can see in the following graph temperatures have been raising and the last years were among the top warmest years on record (WMO, 2012).

NASA [online] Available at: http://climate.nasa.gov/keyIndicators/

This increasing temperature measured over the last 100 years has been having major negative consequences to the world's climate and ecosystem. Communities in countries which have always been more exposed to natural disasters are having a harder time to adapt to the more frequent occurrence of cyclones, extreme precipitation, floods, droughts, wildfires, heat waves, snow and extreme cold. These are all considered to be sudden-onset disasters which cause the forced displacement of millions of people. The first global estimate of displacements cause by sudden-onset disasters was published by the Internal Displacement Monitoring Centre (iDMC) in 2008, a year in which 36 million people were displaced by such disasters. This number has varied since then, having 17 million in 2009, 42 million in 2010 and 14.9 million in 2011 (iMDC 2009, 2011 and 2012). With increasing weather extremes being measured in the past few years, it

is hard to predict how many people will be displaced by natural disasters in the next few years, but the highest number usually is noticed in developing countries where people are poor and more vulnerable to natural disasters - in 2011 89% of the displacement occurred in Asia (iDMC 2012). Later in this chapter we will have a closer look at the different types of displacement caused by climate change.

The phenomenon called climate change has been widely accepted – as just seen, temperatures are rising, natural disasters happen more frequently and an increasing number of people are victim of sudden- and slow-onset disasters. Most of these people live in developing countries where most people are dependent on agriculture and their livelihoods dependent on the stability of their ecosystem. Floods, soil erosion, heavy precipitation and droughts damage most crops and with potentially disastrous impacts on food security during the period from 2050 to 2100 (FAO, 2011). In many of the developing countries which are more vulnerable and exposed to the consequences of climate change, agriculture has a high contribution to the national GPD. In the following graph we can see the value added (in percentage) by agriculture to the GPD of the countries which will be referred to in this thesis.



Source: World Bank[7]

[7] "Agriculture corresponds to the International Standard Industrial Classification (ISIC) divisions 1-5 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Value added is the net

As we can see, countries such India, Bangladesh, China and Eritrea are much more dependent on agriculture than compared to the rest of the world or the average of the members of the Organization for Economic Co-operation and Development (OECD) member states. Since agriculture plays such an important role for many countries and food security is in jeopardy, several organizations and institutes such as the Food and Agriculture Organization (FAO) and the International Institute for Applied Systems Analysis (IIASA), among others, have done a thorough analysis about climate change and the related agriculture vulnerability. In 2002 the IIASA prepared a special report on "Climate Change and Agricultural Vulnerability" (Fischer, Shah, van Velthuizen) as a contribution to the World Summit on Sustainable Development which took place in Johannesburg that same year. The importance of agriculture is reflected in several of the data and conclusions given by this report. In the next half a century the world population will increase 2 more billion people to the already 7 billion, increasing the pressure on the importance of agriculture and the capacity to produce food for the already 84 food insecure countries. According to this report 4.2 billion people (74% of the current world population) live in these countries and 18% of them are undernourished. The UN statistics related to population grow predict that by 2080 these countries' population will increase to 6.8 billion which would mean 80% of the predicted total world population. If we make some static estimates, not taking into account any major changes related to each country's economic and social conditions, this would mean that 1.2 billion people will be undernourished in 2080. An increasingly damaged ecosystem will cause serious food insecurity which on the other hand will force people to search for work, shelter and better living conditions in places where the soils might be more fertile.

Another serious slow-onset climate change related disaster is the rising of the sea level caused by the rising temperatures and the melting of the glaciers. The next table shows IPCC's predictions as for the temperature level and the correspondent sea level rise.

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output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources."

Case	Temperature Change (°C at 2090-2099 relative to 1980-1999)[a] Best estimate	*Likely* range	Sea Level Rise) (m at 2090-2099 relative to 1980-1999) Model-based range excluding future rapid dynamical changes in ice flow
Constant Year 2000 concentrations[b]	0.6	0.3 – 0.9	NA
B1 scenario	1.8	1.1 – 2.9	0.18 – 0.38
A1T scenario	2.4	1.4 – 3.8	0.20 – 0.45
B2 scenario	2.4	1.4 – 3.8	0.20 – 0.43
A1B scenario	2.8	1.7 – 4.4	0.21 – 0.48
A2 scenario	3.4	2.0 – 5.4	0.23 – 0.51
A1FI scenario	4.0	2.4 – 6.4	0.26 – 0.59

Tble notes:
[a] These estimates are assessed from a hierarchy of models that encompass a simple climate model, several Earth System Models of Intermediate Complexity and a large number of Atmosphere-Ocean General Circulation Models (AOGCMs).
[b] Year 2000 constant composition is derived from AOGCMs only.

Source: IPCC [online] http://www.ipcc.ch/publications_and_data/ar4/wg1/en/spmsspm-projections-of.html

IPCC's has created reports with different scenarios. These scenarios have been widely used in the analysis of possible climate change, its impacts, and options to mitigate climate change.[8] This table uses some of those scenarios and it shows how much the temperature is predicted to rise and how much the sea level would rise in each one of them. Even in the more optimistic scenario, B1, there could be severe consequences to some small island states in the pacific, such as the Tuvalu and Kiribati (Mcadam, 2010). The Maldives, also threatened by the sea level rise, have now been trying to raise awareness in the international community. One of the most known initiatives was done in 2009 when the government held an underwater Cabinet meeting. If the worst case scenarios happen the people of these countries will eventually be forced to move to a totally new country since existence in their countries will no longer be possible. Even if these might be alarmist predictions, the international community has to be prepared to help these states with mitigating and potentially adapting the slow rising of the sea level. This slow-onset disaster will not only affect islands states but other countries as well, such as Bangladesh, where people will be forced to move inland because of the rising of the sea level. We will have a look at more details when presenting the case study as part of the thesis' methodology.

[8] In 2012 IPCC published its latest report: Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation (SREX). The different scenarios presented cover a wide range of the main driving forces of future emissions, from demographic to technological and economic developments, but exclude policies that would explicitly address climate change.

These climate change consequences to the ecosystem, societies and economies lead us to the core of this thesis, the climate induced migration. As mentioned in the IPCC report (2012) the character and severity of impacts from climate extremes depend not only on the extremes themselves but also on exposure and vulnerability. Even if climate change knows no boundaries, it is inevitable that those who are the most affected by climate change are the people living in developing countries which most of the times are situated in geographically disadvantaged areas of the globe and which, as seen earlier, heavily depend on agriculture. In general, people's capacity of adaptation to the climate extremes and the climate disasters (sudden- or slow-onset) depends on multiple factors, but mainly on their access to financial resources, their social and cultural context. Migration has been always a way of people adapting to harsher ecological conditions. However, climate change and environmental factors can intensify migration pressure and it is very likely that extreme weather events, slow-onset environmental degradation and sea-level rise will contribute to an increased level of mobility and to changing migration patterns. (European Union, 2011).

In the next few sub-chapters we will have a closer look at the climate induced migration, at the other type of migration to a certain extent related to climate change mitigation – the development induced migration, and at Bangladesh – a country with high vulnerability and exposure to the climate extremes and resulting consequences to the country's population.

2.2 The Emerging of a new type of refugees

At the core of this thesis is the one of the most controversial and at the same time pressuring climate change consequence to the human kind, which is the environmentally induced migration – called in this thesis "environmental refugees" – a term which is not accepted by all the scholars, politicians or scientists. Over the years there has been an increasing amount of literature about the relationship between the environment and human migration, having as purpose to seek to discover if climate change and environmental degradation can cause forced migration and displacement. Among the most prominent scholars who deal with this topic (Myers, Bilborrow, Jacobson, Black among others) there is no consensus on how environmental factors impact migration or displacement of people, nevertheless there is an agreement that environmental factors play an important role in relationship to migration patterns (EU, 2012).

Most importantly, there is no agreement on the terminology that should be used to refer to the people displaced by environmental damage. The most controversial term in the round table of debates is the concept of "environmental refugees", since officially defining someone as a refugee would immediately mean that the international community has an obligation to protect and give asylum to these people.

The first formal definition of the term "environmental refugee" is credited to El-Hinnawi, in his paper for the United Nations Environmental Program (UNEP) in 1985 (Morrissey, 2012). For the first time a definition of the term was provided (Westra, 2010):

> Environmental refugees are defined as those people who have been forced to leave their traditional habitat, temporarily or permanently, because of a marked environmental disruption (natural or triggered by people) that jeopardizes their existence and/or seriously affected the quality of life.

The name gained legitimacy as an existing category and not only an hypothetical in 1988, when Jacobson offered the first estimate number of existing environmental refugees and suggested that climate change will play a role in future migration. He estimated 10 million environmental refugees back then based on an assessment of the amount of people displaced by the droughts in the African Sahel in the 1980s. Since then two major groups have been describing the problem in different ways and making different projections around the numbers of environmental refugees. On one side we have those who believe that the combination of climate change and population growth will increase exponentially the number of environmental refugees. Among the most quoted writers of this group is Myers, who increased the prediction made by Jacobson to 25 million refugees and making an estimation of 200 million environmental refugees by 2050 (Morrissey, 2012 and EU, 2012). On the other side we have the scholars which are usually migration experts and who tend to be more skeptical. Bilsborrow and McGregor (cited in Morrissey, 2012) are among those who criticize this term "environmental refugee" and the simplistic prediction based only on population growth and climate change, since they believe that other factors play a role in the decision of individuals and their patterns of mobility. They believe that the patterns of migration are influenced by the complex interaction between environmental and social systems. Despite the disagreement on how to conceptualize environmental induced

migration, it seems to be clear that hypothesis 1 can be accepted and has been accepted among scholars and the international community.

This thesis agrees with the complexity of assuming a direct causal link between climate change and migration, and does not ignore all the other factors which influence migration patterns (such as inequality, financial stress, poverty, vulnerability, etc). Nevertheless the urgency of solving the problem requires an immediate action, which can only be achieved if there is a definition which will activate action among the international community. Hence, because there is a need to generate allegiances across the international political spectrum, the term "environmental refugee" is chosen in this thesis. In the chapter dedicated to the evaluation of the 1951 Refugee Convention, we will elaborate further on this term.

2.2.1 Other types of displacement: Oustees and Internally Displaced People

You take my house when you do take the prop
The doth sustain my house;
You take my life
When you do take the means whereby I live.
Shakespeare, Merchant of Venice

Let's have a look at how other types of migration movement can be included within the term "environmental refugee". The current official definition of refugee only includes one type of forced migration; however there are several more types of people who are forced to move either because of war, political tension, environmental degradation or governmental development programs. These include Internally Displaced People (IDPs), who are those who stay inside their national borders, but are forced to relocate from their homes. Another group is referred to as Oustees, who are people forced to move because of development programs such as dams, railways and highway construction. These labels will influence the strategy and support that these groups will receive. However one assumption is made by Cernea (1997), which is that no matter which kind of forced migrants we talk about, they all share their experience regarding resettlement, and that it is a challenge politicians have to address. Moreover, all types of displacement have as a consequence the impoverishment of those resettled. However, the question remains if a successful resettlement policy can be divorced from the original causes or

degree of the violence of the displacement. In addition, besides the cause, there is the length of the displacement: irrevocable, permanent or temporary.

Hence, when talking about resettlement in general terms, it is crucial to point out the difference between the different groups of displaced people, since there are the ones who move by themselves, IDPs, or refugees, and those who are forced to move "oustees". As Lassailly-Jakob (2006) affirms:

> *"For refugees, the decision about when and where to move rests with themselves, even though they "choose" under extreme stress. Most African rural refugees can be called "mass distress migrants". In contrast, oustees are "displacees" or "evacuees" who are moved as a result of administrative decisions. They are therefore entitled to compensation. As a result, assistance and coping strategies differ between the two groups".*

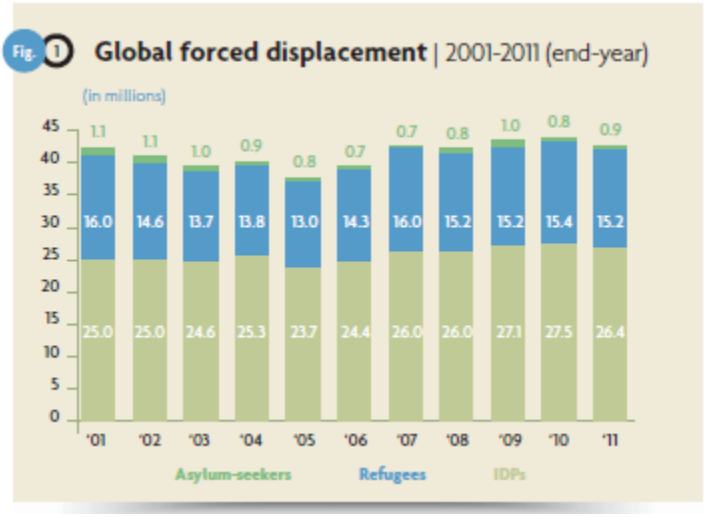
Thus, even though all these groups have a common factor, which is being resettled somewhere else, inside and outside their borders, there are many aspects which have to be taken into consideration when it comes to thinking about the best strategy to help those different groups. Furthermore, these groups have different international organizations and institutions helping them. Oustees are supposed to be helped by the local governments that decided to build a new dam, highway or railway for purposes of development. On the contrary, IDPs are not helped by their governments, since they resettle "voluntarily". However, IDPs get displaced because they are:

> *"persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border."* (Guiding Principles on Internal Displacement, Introduction, para. 2)

Hence, the IDPs do not have the same protection as Oustees or refugees. They are inside their borders, thus The 1951 Refugee Convention does not apply to them, even if they have the same reasons to flee as a refugee would have, and the governments do not have a resettlement project for them, since they moved voluntarily. Nevertheless, these groups of uprooted people

are often victims of human rights violations and are helped by many non-governmental organizations (NGOs) which focus on helping such victims. Additionally, there are some countries such as Azerbaijan, Bosnia and Herzegovina, Colombia, Croatia, Georgia and the Russian Federation which adopted a legislation providing for the creation of a national status for IDPs or selected groups of IDPs. Even though this status is not required under international law, it will help those entitled to the status to benefit from social, economic and legal assistance to safeguard rights endangered by displacement and support the implementation of durable solutions (IDMC, n.d.).

The following chart shows the latest numbers on forced displacement (UNHCR, 2011), nevertheless it is important to emphasize that these numbers only include those who were forced to move due to conflicts. If climate forced induced migration would be included, the total number would be much higher. The numbers in the chart show do not indicate a decrease on the IPD or refugee problem.



In addition to IDPs and refugees, Oustees represent a large group of displaced people around the world. According to the latest numbers, 15 million people are uprooted every year on the name of the development which is considered by many to be leading to environmental degradation (International Accountability Project, n.d.). The general outcome of this forced displacement is the impoverishment of those who have been uprooted, suggested by hypothesis number 2. Even though it is supposed to be more environmentally sound than oil, coal or nuclear power, the construction of hydro-power dams is under attack by the press and has

become the focus of many critics because of the increased number of oustees as a result. In the beginning of the 1990's there was the prediction that between the time frame of 1990-2020, there would be an explosion on energy supply and demand in the developing world (Cernea, 2004). Thus dams are being constructed on a regular rhythm all over the world, with bigger projects happening in countries such as India, China, Brazil, Canada and Peru, among others.

So the question which arises is why are those projects criticized if they are more environmental than other energy sources, are good for irrigations, stop floods and are part of the countries' development? Many critics say that those constructions worsen the environmental degradation and have often severe negative social impact. According to Cernea (2004), there are four main negative social impacts of dam projects: Boomtowns; Downstream Unanticipated Social Impacts; Loss of Cultural Heritage and Forced Population Displacements.

a) Boomtowns

These are the called artificial and temporary towns created by all the workers who will be working on the project and moved to the local communities during the construction time. The majority of the affected communities are small traditional rural communities. Thus the inflow of new people normally causes social, health, economic and cultural problems to the local population. Over the past 15-25 years one of the biggest problems is the spread of AIDS (Cernea, 2004). In addition, there has been reported an increase in marital problems, increased mortality and teenage pregnancies. Some of the problems could be allayed if locals would be recruited to take part in the dam construction. People would be trained, take pride in the work, better accept the resettlement. Project costs could be decreased by employing local people thus avoiding the extra costs of relocation, travelling, among many others. Hence including in the planning the recruitment local people, it would decrease these boomtowns risks and reduce the total costs.

b) Downstream Unanticipated Social Impacts

The construction of dams and reservoirs has two primarily positive impacts: irrigation and flood prevention. However, even though these impacts are really crucial and important for many communities, other negative impacts are generally ignored by the construction planners, mainly because they use a single-dam approach and not plan on a basin-wide approach. Consequently,

planners do not take into account that some communities have used floods from generation to generation, and have adopted an agricultural system which actually depends on those floods. The effect of stopping those essential floods for the recessional agriculture has negative social impacts for those communities affected, since it lowers harvests, drops productivity and causes impoverishment. Some critics contend that one of the possible solutions to tackle the problem could be causing artificial floods.

c) Loss of Cultural Heritage

There is a cultural loss which is considered to be relevant to people affected by the construction of hydro-power dams. There is usually the loss of underground remains of considerable historical meaning and buildings or places with cultural, spiritual or religious meanings. Many of these places were created or used by past or current generations and will be under water after construction. Hence, these losses might have a social effect because those people will lose assets which were really important for their community. Planners should take these aspects into consideration as well and try to protect or rescue what is possible.

d) Forced Population Displacements

Hydro-power is considered less harmful for the environment; however, there are several elements which are the major cause for the discussions and disagreements. In India, over the last five decades development projects affected over 50-55 million people who had to be displaced. According to the World Commission on Dams (WCD) it's estimated that dam construction uprooted 40-80 million people worldwide (Cernea, 2004, p. 8). Finally the main problem seen by critics is actually not the number but the content, i.e., the impoverishment of those displaced people. Many developing countries, where dams are being constructed on a high number, don't have enough policies and legal frameworks to protect the wellbeing and livelihoods of those displaced. To exemplify this trend, consider India, a country where so many people are uprooted as a consequence of dam projects. It was only in the year 2004 that a policy of resettlement was adopted. By that same year over 75% of the displaced people had not been rehabilitated or restored to the same level they had before being displaced. Many millions were even much poorer than before.

The main problem which persists is that many developing countries do not have formal policies and legal regulations relating to involuntary resettlement caused by development. Hence if those countries are willing to explore their natural resources and build more dams to boost development, their governments need to have a specific legislation with directives which would allow efficient public response to the social negative impacts cause by hydropower development. For this reason, hydropower would not only be environmentally more sustainable than other energy sources, but such legislations would allow it to be socially sustainable as well.

Besides the national and regional governments there are major international institutions which finance a small percentage of the hydropower projects, among other: the World Bank, Organization for Economic Co-operation and Development (OECD) aid agencies, the Norwegian Agency for Development Cooperation (NORAD) and the Swedish International Development Cooperation Agency (SIDA). The World Bank, as the major player financing hydropower projects, put together a clear policy in 1980 which has improved over time and has included other projects and studies in the following years. In 1990 the World Bank published operational directives which have to be taken into account in voluntary resettlement (IFC, 1990). There are several key elements of the World Bank's resettlement policy which are as follows:

- Study all possible project alternatives in order to avoid or at least minimize displacements;

- Improve or restore livelihoods: if resettlement is unavoidable the World Bank goal should be to assist the uprooted people to at least restore or even to improve their former living standards. This should be achieved by including a resettlement plan in the project design;

- Assign resources and share benefits: "Displaced persons should be (i) compensated for their losses at full replacement cost prior to the actual move; (ii) assisted with the move and supported during the transition period in the resettlement site; and (iii) assisted in their efforts to improve their former living standards, income earning capacity, and production levels, or at least to restore them;" (IFC, 1990)

- Ensure that the local community is consulted and can participate in the planning and implementation of the resettlement program;

- Smoothly resettle economically and socially the displaced into the new host community so that impacts are minimized. It can be achieved by having a previous consultation with the future hosts and making sure those areas will provide the benefits for the displaced ones;

- Insure that house, land, infrastructures and other compensations are provided to the affected population regardless if they have a legal title to land.

Besides these key elements for its resettlement policy, the World Bank has 4 essential procedures which are required in order for it to address resettlement issues (Cernea, 1997):

a) A population and baseline income survey, as part of the feasibility study;

b) A detailed resettlement plan for the people's socio-economic reestablishment;

c) A relocation timeline correlated with advances in civil work;

d) A distinct budget for resettlement.

The resettlement plan is then helping to at least try to resettle the livelihoods of those displaced and relocated. Hence it should be done by professionally trained analysts (sociologists, anthropologists, social geographers, resettlement specialists) together with economists. As for this planning and going back to the bigger organizations which finance dam constructions, since 1990 the OECD has guidelines for involuntary resettlement under projects which are assisted by their own agencies, and all member countries have adopted those guidelines. The OECD is not the only organization having resettlement guidelines, which will help doing a resettlement plan, others such as NORAD or the International Hydropower Association (IHA) have guidelines too.

According to Cernea (1997), one of the most detrimental faults in the social feasible studies for the hydropower is the underestimating of the amount of the costs of population displacements and resettlement. Planners normally tend to overlook the real costs since they want to make it the least expensive possible, shifting the rest of the real costs then to those resettled. The World Bank, as the major player in these issues, carried out in 1993/1994 a key study of all 1986-1993 Bank financed projects related to resettlement. The study was to analyze the resettlement implications development programs worldwide and to find better solutions to the consequent

severe social problems. Cernea led the special Bank Task Force in charge of this study. As he says, these aspects were analyzed during those years:

> *"We have analyzed the socio-economic nature of the resettlement process in various countries; their causes and scale; the policy and legal frameworks governing such processes; their planning patterns and financing issues; and the actual resettlement implementation processes – with their strengths, weaknesses and outcomes".* (Cernea, 1997)

The main conclusion of this study was that good resettlement prevents impoverishment and even reduces poverty by restoring sustainable livelihoods. On the contrary, if there is no good resettlement, it will provoke local resistance, increased political tensions, causes project delays and postpones project benefits for all concerned. In order to achieve a good resettlement there is a need to develop adequate legal frameworks protecting people's rights, and this has two dimensions. First of all there is a need to define the legal entitlements of persons who are displaced, and secondly ensuring the delivery of such entitlements. If there is no such binding and formal policy, it normally means that there is more operational flexibility, however this would go at the expenses of higher long term costs, externalized to others (normally to the resettled ones). There are five sets of legal issues which are suggested in order to introduce a possible and effective process to identify losses and develop restitution measures (Cernea, 1997):

- Identifying the cause-effect relationships between projects and impacts.
- Identifying categories of adverse impacts.
- Defining eligibility: identifying affected people.
- Extending eligibility to displaced people with rights not recognized by the law.
- Including mechanisms for grievance and dispute resolution.

Several countries in the world, such as Colombia, Brazil, Indonesia and China, among others, have improved their national policies after these suggestions by the World Bank. Their way of doing it has been a compromise between policy, organizations and resources.

Another conclusion from the World Bank study was that the legal frameworks alone are not enough to have a full success. It is fundamental to have sufficient financial resources in order to

have good results, since when resettlement costs are assessed wrongly, the local communities are the ones, which will have to bear an excessive share of the financial burden. Thus it is crucial to address the financial issues during the planning stage in order to avoid the two typical problems (Cernea, 2004):

- Depreciation of assets and property under assessment are common
- Delays in making the payments to the displaced (taking up to 10 years in some countries such as Nepal) obliging the displaced to go into debt in order be able to survive.

Actually the delays cost more than that of a proper resettlement would cost. In this study the World Bank found that a one-year resettlement delay in getting project benefits will reduce the project's net present value by almost a third; a two-year delay, by more than half.

Thus this study done by the World Bank was crucial to identify the crucial aspects to be taken, into account when doing a resettlement plan. There is actually an international tool which was first applied in the World Bank in 1993 on a large project portfolio: The Impoverishment Risks and Reconstruction Model (IRR) for resettling displaced populations.

2.2.2 The IRR Model – From Risk Management to Development of Opportunities

The IRR model was developed by Cernea based on empirical discoveries from a big number of development projects, some of them being financed by the World Bank, or OECD among other aid agencies and on the resettlement research by numerous scholars. Its main idea is that preemptive action must be re-directed against one or another, or several of the distinct component-risks related to displacement.

Major agencies have adopted this idea about predicting and preempting the risks and included it into operational handbooks for resettlement. The World Bank itself published a book in 2004 entitled: "Sourcebook on Involuntary Resettlement". The book explains the IRR model which summarized goals to change the mind-sets of solving problems after they occur, but to try to predict the risks and prevent them from mobilizing institutional and financial resources. The IRR model is basically based on three fundamental concepts: risk, impoverishment, and reconstruction. Cernea's purpose when writing and proposing the IRR model was to help having

a better final outcome in difficult involuntary resettlement situations induced by development programs. The IRR model should be added as a tool to explain, diagnose, predict and plan those development projects and the consequent displacement and resettlement of people. There are several functions to which the model can be employed:

- a predictive function, to anticipate the main impoverishment risks involved in forced displacement and resettlement;
- a diagnostic function, to help assess in the field the content and the intensity of each major risk, in a given project's context;
- a planning and problem-resolution function, to guide the design of counter-risk measures and their incorporation in resettlement planning, for either preventing or mitigating risks; and
- a research function, to serve as methodology in the scholarly analysis of resettlement impacts and to guide monitoring and evaluation studies on resettlement processes.

The IRR model offers a cognitive and analytical advantage because it is based on the result of several years of analysis and it allows saving time when planning the construction of a new dam because every project should already have into consideration a matrix of 8 basic impoverishment risks: landlessness; joblessness; homelessness; marginalization; increased morbidity (and mortality); food insecurity; loss of access to common property and community disarticulation (MESAS, n.d.).

All these risks are very likely in forced displacement. However, before the displacement actually starts these are only risks, thus it means these eight points are only potential and likely to happen, but did not happen yet. Thus if enough and adequate counter-risk measures are taken on time and early enough, these risks might not happen and be prevented or reduced. Thus the IRR should be used as an analytical and problem-resolution too, which confronts the preemptive risks early on.

Consequently the IRR model, which can identify 8 potential impoverishment risks, can also suggest ways to transform those risks into distinct efforts of rebuilding the livelihoods of those displaced (Cernea, 2004):

1. From landlessness to land-based resettlement;
2. From joblessness to reemployment;
3. From homelessness to house reconstruction;
4. From marginalization to social inclusion;
5. From increased morbidity to improved health care;
6. From the food insecurity to adequate nutrition;
7. From loss of access to restoration of community assets and services; and
8. From social disarticulation to rebuilding networks and communities.

As a result the IRR and its strategic direction towards reconstruction indicates that it is not only a tool to predict unavoidable indigence, but as well a tool to create the roads for restoring gradually the livelihoods of the displaced. All the elements which were enumerated as possible ways to reconstruct the livelihoods are interdependent, thus planners have to take all of them into account. Moreover, the model and its methodology are not limited to the risks mentioned above, since planners have to take the particular local characteristics which each project might have (Cernea, 2004).

In general the IRR model and the empirical results so far prove that if the risks are taken into consideration on time and in the planning phase, if preemptive measures are taken, if impoverishment risks can be successfully tackled or reversed, livelihood of those displaced can be reconstructed, even if it a difficult task. Moreover, at the time Cernea wrote the IRR and until today, it has been proven to be a more practical model than the conventional risk management practices.

The World Bank' policy guidelines in resettlement which were adopted first in 1980 and progressively adopted by other organizations such as the OECD and Asian Development Bank (ADB) are very useful. However in this model there is a need for more institutional emphasis and incisive monitoring for its consistent application. One example given as a flaw in this tool is that the economic analytical methodology used in the preparation of projects is many times incompatible with the guidelines themselves causing cost externalization and an incomplete risk analysis. Thus the IRR model is a useful tool to compensate these overdue methodologies for most of the developing and some developed countries which do not have any clear policy for involuntary resettlement.

2.2.3 China and India - Two big dam constructors

India and China are traditionally two of the biggest dam builders. In the beginning of the second half of the XX century, China and India did not have any strategy as for the oustees' resettlement. Governments and dam constructors had as a main priority to promote the development in those countries. They had no specific plan on how to relocate those forcibly displaced people in a proper way, but rather just moving them to a new place and give them some money. Both in China and in India there is a large amount of uprooted people who live in very bad conditions. In China for instance between 1050s and 1060s around 7.8 million people were displaced as a cause of dam constructions (Hemig, Paul and Rees 2001). In 1996, according to some statistics made by a Chinese researcher (Jing 1996) "*about two thirds of the teen million uprooted people by reservoirs are still living below the poverty line*."

As for India, by the year of 1996 there had been 20 to 50 million forced displaced people (Judge, 1997). Very few of them have been relocated in an adequate way, the majority of them got some monetary compensation and then later received some agricultural land. The Indian government only started looking deeper at the consequences of the displacement of people later on, meaning that only in the final part of the XX century the concept of full rehabilitation including the social, cultural and economic dimensions was taken into account.

In China there were 3 forms of negative consequences from the resettlement (Hemig, Paul and Rees 2001):

a) Economic impoverishment – The main reasons are the loss of the settler's land, a decline in land per capita and the degradation in land quality. Original living standards were not restored.

b) Social instability – Oustees, when relocating to a new area, they tend to see themselves as strangers in the new locations. Moreover they normally have a lower income and a lower standard of living than the hosts, usually creating clashes between oustees and hosts.

c) Environmental degradation – the environmental changes are several and do not impact only the society in general. Oustees, when they relocate, they normally do it from a fairly fertile flat land to rather infertile hilly area. There they destroy forestry and grassland increasing water surplus and soil erosion. Moreover the fact that there are more people and less land contribute to a deterioration of the living standards and conditions for the people living in those areas.

In the late 1990s the Chinese government became aware of the need for a change of policy and relocation strategies and approach. The new approach was called "Development Resettlement" (Hemig, Paul and Rees 2001). The idea behind this new approach was that the solution was not to give the compensation directly to the oustees but to rather allocate it into the improvement of farmland, cultivation of cash crops and the establishment of industrial enterprises.

Around the world, as for damn construction, there is a common feature which is that inadequate compensation and frequent delays are a common characteristic in many developing countries. The Chinese government finally realized that that the problem has to be tackled differently in order not to worsen the living standards of those resettled and in order to avoid society tension and clashes. The Chinese authorities have had the chance to put into practice and test a better relocation system and policy with the building of the Three Gorges Dam - one of the biggest dam projects worldwide (China Three Gorges Corporation). We will also use this major project to evaluate the benefits and limitations of the IRR model.

According to a 1992 survey, the TGP (Three Gorges Project) reservoir impoundment will inundate 632 km 2 of land, including 24500 ha of farmland and citrus land, and affect habitats of 844100 people under submergence. It was planned to relocate a population of 1.13 million people. The relocation and resettlement of TGP reservoir migrants is a world record in scale and in difficulty.

However, the project was initiated in a transition period in China, from a centrally planned to a market oriented economy, moreover, according to the authors of *Reservoir resettlement in China: past experience and the Three Gorges Dam (2001)* the transition happened as well in a transition period from a homogenous and closed social structure towards a society which unlocked itself to diversity and openness. Thus the people who had to be relocated were more aware of their political and economic rights. In a survey made to the people affected by the project the majority of those interviewed answered that they are hoping for "sufficient compensation, better housing, and job opportunities in the cities." (Hemig, Paul and Rees 2001)

The Chinese Government has used different strategies to resettle the rural oustees:

1- *settling migrants in nearby areas on land to be farmed*;

The problem with this strategy is that the quality of land is worse and they get a smaller portion of land – they are moved to upper steep infertile slopes. This worsening of land quality and land fertility has as a consequence a decline of income and the impoverishment of the displaced people.

2- *allowing migrants to move to and live with relatives in urban areas*;

This strategy contains the idea of moving the rural migrants to cities where they can live with friends or family and get them jobs in the industry sector. This approach worked well with the elderly because they did not have to a get a job. However, the young rural migrants had troubles keeping their industrial job. Large-scale and high performing enterprises are not open to received rural migrants, thus these are mostly employed by township enterprises which undergo bigger troubles as for lack of financial help, resources and lower technological quality. As a consequence it is unavoidable that they lose their jobs.

3- *Moving migrants far away*.

Between 1994-2001 people were relocated to nearby rural and nearby urban areas. However, people and government leaders were not satisfied with the corruption and misusage of relocation funds and the environmental damages in the reservoir area, thus the new approach was to send them further away. Some of the rural displaces do not mind being resettled to a faraway area, however, the majority is reluctant when it comes for this option. Here are the four reasons why (Hemig, Paul and Rees 2001):

a) The difficulty of rebuilding livelihoods: the majority finds it difficult to learn how to grow new crops and how to change their production manner.

b) The difficulty of integrating into the host community: It is difficult for the rural migrants to feel welcome by the host communities, which are already dealing with shortage of farmland and population growth making them less willing to share their resources.

c) The loss of social networks: Families and friends are separated and resettled in different places making them lose their support group. There is a consequent stress added to the many changes the displacees face.

d) The difficulty of a new and strange environment: many of the people did not manage to get used to the strange new environment and go back to their home while they were able to.

Hence, during the resettlement years the rural displacees have always shown preference to move to urban areas. Besides preferring it to being resettled faraway, the other cause is that in general there was higher funding for rebuilding houses and infrastructures for the urban migrants than for the rural ones. The reason is that in rural areas the money is used for a wider range of items and to cover the income loss during the resettlement period. Thus rural migrants sought the urban resettlement option because saw it as s synonym of having greater benefits, higher social status and job safety.

Getting back to the TGP, even if China's performance in resettlement improved, this project encountered major problems, mainly related to the environment, the resource situation and the insufficient farming potential in the area (Heggelund, 2006). Despite these

problems, this project and its dimensions was seen by some scholars as a good opportunity to test the model (even the model is frequently used for organizing risk patterns in World Bank projects). According to Heggelund, four major points of the IRR model were helpful to do the diagnostics in the project:

a) Landlessness – The majority of the people being resettled (87.3%) are peasants who will lose their land

b) Food Insecurity – This loss of farm land to the project decreases the capacity of producing food and increases the food insecurity in the area

c) Jobless – The mentioned peasant will lose their jobs and will either work in factories or get a remuneration

Marginalization and Social Disarticulation – people will lose their strong family ties (very important in the local culture) and will be marginalized by the people already living in the areas where they will be relocated (since they have to share the land with the oustees)

Nevertheless the IRR model has its limitations. Each project is done in different countries where political, economic and social situations vary. In the case of China the model cannot make up for the restrictive laws which prevent a high public participation in the planning and decision-making and even lower at a local level. Moreover arrests and humiliations happen frequently taking the problem to a human rights level which is not included in the IRR model. Furthermore, the natural resources and environmental degradation are different in each location or country. Accoring to Cernea (1997) "The risk of landlessness is prevented through land based relocation strategies", but in the case of the TGP there is very little land to distribute to the rural population which potentially will cause force people to migrate. Finally the socio-economic environment of the country and the corruption also are very special to China, and the IRR model does not tackle these differences.

Having a look at the situation after the conclusion of the project, in 2010, two years after the completion of the TGP and after 1.2 million people had been already displaced there was the need to displace 300.000 more (Watts, 2010). The damages started in 2003 when the first water was filled into the dam, when around 700 million cubic feet of rock slid into the Qinggan River

(Hvistendahl, 2008). By then scientists had made early warning on the environmental damages the dam would have. In 2010 less than 2 years after the completion of the project, site engineers have found landslides, water pollution and there is the fear that the dam might trigger severe earthquakes. However despite these problems, hydropower is one of the solutions for China to decrease the greenhouse emissions. In general China is the country with the highest amount of Dams inside its borders, having displaced so far around 23 million people, being this the price for its development and growth (Booshard, 2011).

Governments around the world will continue to build dams and developing projects will always be part of countries' reality, however there is the increase need for sustainable development plans and for the governments to have laws which will protect those affected by it. The IRR model has been very influential but does not offer the full solution for every project. In the following chapters we will be looking into possible solutions to tackle all forms of international displacement and how countries should build sustainable development plans.

2.3 Case Study: Bangladesh

Among all the countries which are at a higher risk of being affected negatively by the climate change consequences, Bangladesh is one of those at the top of the list. With a population of 150 million and a density of 720 people per square kilometer, it is a country which 6.7% of its area is made up of rivers and inland water bodies. With 3 major rivers - The Ganges, the Brahmaputra and Meghna - all converging at the Bay of Bengal, Bangladesh has the largest delta in the world. Another aspect which increases its vulnerability is the fact that only 50% of the country stands 10 meters above the sea level and that floodplains spread over 80% of the country's land area. (Asian Development Bank, 2004).

As for the economy, the country had a GPD growth of 6.1% in 2010 (World Bank, 2012). The main GPW growth contributors are service sector (48%), industry (27%) and agriculture (25%). From these three main contributors agriculture plays a major role since it creates 63.2% of the total national employment, it helps with poverty alleviation and most of all with the food security. Hence in a country where agriculture is of major importance and where 84% of the total

population lives in rural areas, many of the environmental challenges affect a big part of the country's population (Asian Development Bank, 2004).

Many reports and studies have been written about the environmental challenges and climate change consequences affecting Bangladesh. There are some different opinions on the extent of the problem and on how tackle it. One of the main debates and concerns is around the population displacement cause by climate change or environmental disasters. It is hard to estimate the exact number can be given regarding some of the main concerns such as population displacement internally and internationally. Moreover, it is almost impossible and careless to blame population migration only on climate change or natural disasters. However, in a country where 81% live on less than $2 a day, 50% lives on less than $1.25 a day and three quarters of the population live in rural areas, the consequences of climate change and the natural disasters are aspects which will certainly worsen their lives and encourage displacement.(Mcadam, 2012)

But what are the some of the vulnerabilities and of the environmental hazards in Bangladesh that affect its economy and population?

1. Pollution - in urban areas the problem is more serious since there is a bigger concentration of people in those areas;

2. Solid Waste – in Dhaka city alone 3000-3500 tons of solid waste are produced a day, from which only 42% is collected by the city authorities;

3. Water pollution – cause by several types of waste (industrial, agricultural, municipal);

4. Land degradation – this happens mainly because of the increasing salinity intrusion, soil erosion, fertility decline and nutrient imbalance. On top of the land erosion there is as well river banks erosion.

5. River bank erosion – a problem which affect hundreds of thousands of people in the country. According to the Bangladesh Water Development Board there are about 1200 km of riverbank which is actively eroding and more than 500 km face serious problems due to erosion.

6. Flooding, cyclones and storms.

All these vulnerabilities are impacting the Bangladeshis and their livelihoods. In a country where agriculture plays such an important role some estimates indicate that soil erosion, water erosion and salinity intrusion impact the productivity loss to a total of 4.33% of GDP (Asian Development Bank, 2004).

In an overall Bangladesh is a poor country where environment plays a big role and affects very deeply the lives of the people living within its borders. The big debate is not only around how to help Bangladesh tackle all these challenges and how to help the country to develop sustainable growth but it is also around the migration problem caused by the climate changes and its consequences on people's lives. The rapid pace in which climate changes are happening challenges the traditional strategies that people used to cope with all floods, erosions, cyclones and droughts. Hence, the tendency will be to find new coping strategies and or people will be forced to leave the country for other locations.

Some predictions report that by the year 2050 around 30 million people will be displaced as a result of climate change (Mcadam, 2012). However, it is very hard to know how many people left Bangladesh or to predict how many people will leave Bangladesh because of the climate change and the environmental degradation. As mentioned earlier, it is a country, which has a high poverty rate; it is very undeveloped and has limited land availability. Therefor one of the challenges when dealing with migration and how to handle it is the fact that it is very hard to know what the real cause for people's movements is. Nevertheless the type of migration which is being seen in Bangladesh (internal migration and cross-border migration) should not be neglected since it might cause internal clashes among different groups of people and with the neighboring India, where many people are believed to migrate to.

As for internal displacement, since 1990 over 100,000 people have moved on a permanent basis from the coastal island of Kutubdia in the south of Bangladesh to cities such as Chittagong, Cox's Bazar and Dhaka. This movement is apparently cause by the coaster erosion and salinity (Mcadam, 2012). This type of internal displacements, even if not cause by armed conflicts, have to be managed by the government of Bangladesh which has to recognize these displaced people as IDPs. Later in this chapter we will have a look at if and how the government is tackling this problem. Nevertheless sometimes conflicts and clashes are a cause of people who

moved because of environment destruction, and this is what worries the international community. Water scarcity, soil erosion, land degradation, deforestation and lack of basic resources in general create tension between groups which are part of those societies where these problems exist extensively.

Bangladesh's neighboring country, India, is amongst the countries with a higher number of hydraulic development projects. The high energy requirements which are needed for a fast industrialization growth made the Indian Government double its efforts regarding hydraulic projects. Nevertheless, as mentioned in the previous chapter, the price of using large-scale hydraulic projects is very high for a large number of people and for the environment itself. In the following case study the price was paid not only within the Indian borders but as well in Bangladesh.

2.3.1 The Farakka Dam

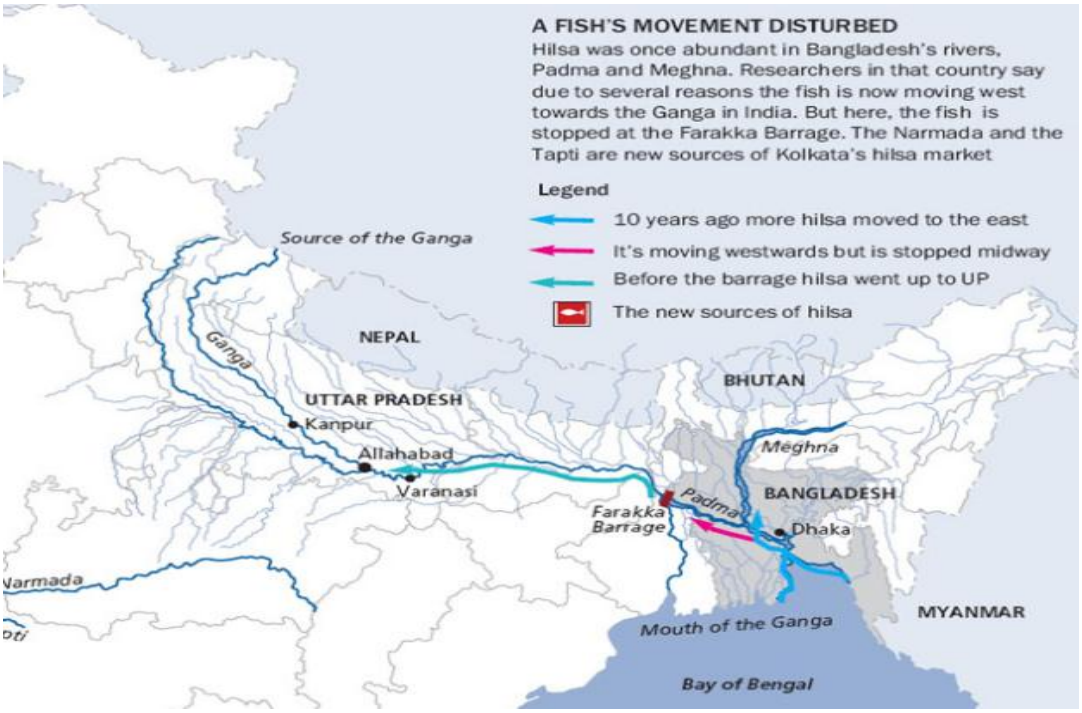
In South Asia the dispute over water has been happening for decades, however the Ganges River has been cause for the most tension. The Ganges River is about 2510 km long and rises on the southern slope of the Himalayas in India and streams through India in a south-easterly direction to Bangladesh. This river bifurcates into two channels before reaching Bangladesh: Bhagirathi-Hooghly, the name of Ganges in West Bengal (India) and Padma, the name of the Ganges in Bangladesh. The dispute over water increased drastically in the 1970s when the Farakka dam was built. The Indian Government built the dam because they felt it was necessary to have that diversion in order to "make the current of water strong enough to flush off the silt and clear the port of Calcutta" (Swain, 1996). The construction of the dam would also prevent floods; help with the demanding growth of Calcutta and with the agricultural needs of the West Bengal region. For all these purposes the dam was built to divert 40,000 cf/s of the Ganges water into the Bhagirati-Hoogly River.

Bangladesh became independent in 1971 and in 1975 with the completion of the dam building, India and Bangladesh signed a short-term agreement for the 40 days of the dry-season period. Nevertheless some intense political situations between the two countries changes things. In 1975 the pro-Indian President of Bangladesh, Mujibut Rehman, was murdered and in 1976

India started unilaterally diverting the Ganges flow at Farakka during the dry season without consultation with Bangladesh. After a back and forth for years, there was no agreement in place until 1996 and during this time India took and diverted water at will. In 1996 both countries signed a 30 year agreement, nevertheless Bangladesh claims until today that the amount of water allocated to the country is insufficient and unfair making the discussions ongoing.

The impacts that it has on the southern part of Bangladesh have been significant and increasing over the years. Around 35 million people in approximately one third of the total area of the country are directly dependent on the Ganges basin for their livelihood. Besides bringing misery and hardship, there are other major effects on the following:

- Reduction and change in the aquatic population
- Disruption in finishing and navigation
- Increased salinity threatening crops, animals, industrial activities and decreasing water supply



Wordpress [online] Available at: http://wakeupbd.wordpress.com/2011/02/02/farakkas-vicious-aggression/

Under these circumstances many among the poorest are forced to migrate somewhere else. Many chose to migrate to the bigger cities in the country, however the falling urban economy has been unable to absorb countless migrants from the affected Farakka-affected area. Without another solution within their border, their ultimate getaway is to cross the border to the neighboring country, India. It is impossible to estimate how many Bangladeshis have moved to India because of the harsh conditions in the affected area, however, during the 1980s and 1990s around 2 million people disappeared from the census calculation in the Kuhlna division, the area most affected by the dam (Swain, 1996).

While the population decreases in the affected area of Bangladesh, the population increases in West Bengal, the adjacent area of India. In this area people usually get along because of similar language and habits. However, the increased migration of Muslim Bangladeshis to Hindu India over the past decades has increased the tension between the locals and the new arrivers. The slums of New Dehli and Bombay have been the home for many thousands of Bangladeshis who migrated for many different reasons. In order to determine if some of the people migrated because of the Farakka Dam, Swain interviewed several people in those different areas and here is a sample of the results (Swain, 1996):

> Of 43 migrants originally from the Khulna region who were interviewed in India, 41 left their homeland due to environmental problems: 13 due to loss of agriculture, 10 due to reduced fish catch, 11 because of river bank erosion and 7 because of flood-related damage. Out of 41 environmentally forced migrants (37 of them Muslims), 40 migrated after the Farakka barrage was commissioned.

Since India itself struggles with some of the natural resources and population poverty, the arrival of new migrants puts new burdens on their receiving society. The migration from the Muslim Bangladeshis since the 1970s has resulted in several conflicts in different parts of the country. There have been politicians murdered, group massacres and the creation of more and more extreme fractions from both sides. In 1995 the situation got to the point in which one of

India's most fanatic Hindu leaders, Bal Thackery, told his followers to "wipe" our the immigrant Muslim community (University of Maryland, 2010). Thus in general, even if it would take a much more detailed study and investigation to determine what are the real cause of the ethnic conflict in India, the study done by Swain proved some significant linkage between the environmental degradation, its consequent migration and the ethnic conflicts in India.

In one report Walsham (2010) wrote to the International Organization for Migration (IOM). He mentions that there are some predictions that climate change will cause between 25million to 1 billion migrants (something very hard to prove with empirical data). Nevertheless he defends the idea that if migration is planned it can provide safety to those many who will have to relocate. In his report he does not mention the ethnic tensions that can occur between receiving population and the new comers, however he does emphasize something that will play a big role to manage all the different consequences of environmental induced migration, i.e., that policy makers should manage this delicate topic as one of the priorities when debating about how to manage climate related challenges in the future. Situations like the one in India are just an example of what can happen in other places across the globe, such in Palestine and Israel, where one of the reasons for the conflict and tension is the water resources.

2.3.2 Current policies and trends to tackle climate change

The Government of Bangladesh, national and international organizations are aware of the challenges the country faces and will face in the future. These major players have been trying to enforce laws, programs and initiatives that can tackle the major environmental challenges of the country. Migration is a complex topic and it is hard to determine the initial causes of the population displacement. Environmental degradation and climate change are not the only factors which will force people to move but they usually are accompanied by poverty and other hardships in their livelihoods. Moreover, most of the climate change displacements will occur within the country's borders, which does not give too much opportunity for international protection making it then a domestic concern.

The domestically displaced people are not officially entitled to any special protection or legal status. One way of helping these environmental refugees would be to increase the international financial and technical help to Bangladesh. The correlation between relief assistance and migration has been noticed in several occasions. In a study made after the 1998 flooding, it was found that people who felt they had been help sufficiently were less likely to move (Mcadam, 2012). Such assistance can help increasing the population resilience to environmental disasters; also supply them with some technical solutions which could then reduce some of the disaster risk. Actually people in Bangladesh, by using a lot of creative thinking, have a very high capacity to adapt to climate change and environmental disasters. Some even consider Bangladesh as the laboratory for innovation when it comes to climate change adaptation.

Shahriar Dider in his farm. Photo taken by Hazel Healy

In a country where the crop production is predicted to decrease by 32% by 2050, creative citizens such as Shahriar Dider are the ones who are trying to find ways of adapting to the climate hazards (Healy, 2012). Due to the increase salt in the water, Shahriar is testing saline tolerant vegetable varieties on the coast. In his interview given to Healy, he says: "We're trying to find ways to help people here, but it's a big challenge. Donor money may not last forever". He is one among many Bangladeshis who try to find solutions which increase the population resilience.

Alongside with the local entrepreneurs are the many international organizations which switched their focus from disaster management to creating resilience. Among those organizations are Red Cross, Oxfam, Action Aid, UNEP and WWF, all of them having "climate smart" frameworks. Some of those actions to increase resilience are the building of disaster-proof villages surrounded by dykes and where houses are on on concrete legs. Even if there are no

static solutions, these types of projects and initiatives might help decrease the number of environmental refugees.

The government of Bangladesh itself is aware of all the problems that the country faces and tried to create a legal, institutional and policy framework which would allow tackling some of the climate change and environmental problems. The major law that had been passed with the purpose of helping with the environment protection and conservation of nature is the Environmental Conservation Rules Act (ECA) of the year 1995. Two years later another legal instrument was passed: the Environmental Conservation Rules (ECR). Besides these two major laws there are around two hundred laws which are related to the environment protection to a certain extent (Asian Development Bank, 2004). Nevertheless, laws in Bangladesh may not be implemented well and enforced due to the fact that often laws contradict each other since there is a lack of alienation. Moreover the corruption in Bangladesh is very high and sometimes it is hard that very rich policies in content get supported by necessary actions of implementation. Finally as for the internal displaced people (IDPs), the only way the government could tackle this problem better would be if they integrate The Guiding Principles into domestic law. In other countries such as Columbia where the highest number of IDPs exist, parts of The Guiding Principles were implemented into domestic law. By encouraging the government of Bangladesh to do the same it would help the country deal responsibly and humanly with the IDPs.

As for the migration in general, including outside of its borders, Bangladesh includes in its 2009 Climate Change Strategy and Action Plan that migration should be a valid option for adaptation. This Action Plan includes: “plans to develop a migration monitoring mechanism, and support for resettlement, rehabilitation, and capacity building through education and training to facilitate resettlement in a new environment”. (Mcadam, 2012). Among the Bangladeshi officials there is the belief that some of the solutions could be bilateral agreements with countries such as Australia, New Zealand and Canada. Nevertheless, as a country which has not yet ratified the Refugee Convention, it will probably have a hard time convincing other countries to protect its people who are displaced because of climate change consequences.

2.4 Summary

In this second chapter we were able to have a closer look at the climate change consequences to the environment and society. With the help from some statistical data from current environmental problems and future predictions we were able to confirm that climate change will have an impact on the ecosystem. These changes in the ecosystem are believed to impact people negatively and to force millions to move to different locations. In this regard, we had presented the emerging of the concept "environmental refugee", a term which is not accepted by all scholars and not officially recognized by the international community as a whole, but a term which is gaining a spot in the discussions and in the works related to climate change mitigation and adaptation. By having a closer look at the construction of dams and the Bangladesh case study, this chapter helped us accept hypothesis number 1, 2 and 3:

- People are indeed being forced to move because of slow- and sudden-onset climate related disasters and many are also forced to move because of developmental programs which are supposed to be better for the environment

- As seen in many of the examples given around the Oustees and in the stories of those Bangladeshis who had to move to India, such displacement generally decrease the living standards of the refugees and have long term negative consequences to the inflicted societies

- Tensions arise when newcomers arrive to places where resources are also scarce – whether it is national or international territory. It is a phenomenon that knows no boarders.

Hence, for the purpose of helping the victims of climate change and development programs meant to help the environment, the next chapters will have a look at the international instruments which could help protect these environmental refugees and a look at the role of the international community as a whole.

3. The 1951 Convention on the Status of Refugees – outdated?

As mentioned earlier, the term "environmental refugee" is not recognized internationally as an official term to define those who have to move due to climate changes and environmental degradation. When El-Hinnawi defined "environmental refugee", his goal was not to ask for a change of the 1951 Convention to include "ecological refugees", but it was rather to emphasize the probable bad impacts of not carefully planned development projects and pollution. Some scholars use the same term in their works about the topic and some others call them climate change refugees, environmental refugees or climate change forced-migrants. From all of these terms, the term "refugee" is not well received in some of the communities which are the most affected by climate change. In places such as the island States of Kribati, Tuvalu, and to a certain extent in Bangladesh, the term is not well accepted by both officials and residents. The term is viewed as describing helplessness and lack of dignity. The President of Kiribati stated that: "*when you talk about refugees – climate refugee – you're putting the stigma on the victims, not the offenders*". (Mcadam, 2012) Another reason given by some of the people in these places is that usually the term refers to people who usually escape from their government but that in their case they don't have desire to escape their countries but that they are forced to because of the actions of western states. They do not want to be seen as victims but rather as someone who is pro-active and wants to contribute for the communities they will be in.

The fact that some scholars and international organizations refer to climate change displacement in a different way, most of these actors agree that there is an urgent need to tackle the problem and to promote a sustainable solution to help the millions of people in lingering situations with no hope of durable solutions. Nevertheless, the lack of an international definition for climate victims shows the absence of political will in the international arena to come up with an instrument which would define the burden-sharing of the climate displacement problem. Definitions serve an instrumental purpose since they delimit rights and obligations providing a starting point to which States are willing to agree and from which solutions can be created. In this case, "environmental refugees" intends to include not only the people who cross an international border but as well those who are internally displaced which is not equivalent to The

1951 Convention and the 1967 Protocol – the official international instrument which protects and gives rights to refugees. The original 1951 Convention was created after World War II, and it aimed to protect people feeling events occurring before 1 January 1951 and within Europe. According to this Convention the term shall apply to any person who (UNHCR, 1951):

> *As a result of events occurring before 1 January 1951 and owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.*

A few years later The 1967 Protocol lifted the time and geographic scope of the convention because new refugee situations had arisen and those people were left out. Other instruments were created in order to match other regional needs which are not covered by The 1951 Convention such as the Cartagena Declaration on Refugees, Colloquium on the International Protection of Refugees in Central America, Mexico and Panama (signed in Columbian in 1984) which includes as refugees: *"…in addition to containing the elements of the 1951 Convention and the 1967 Protocol, includes among refugees persons who have fled their country because their lives, safety or freedom have been threatened by generalized violence, foreign aggression, internal conflicts, massive violation of human rights or other circumstances which have seriously disturbed public order."* and the Organization of African Unity Convention Governing the Specific Aspects of Refugee Problems in Africa: "*The term "refugee" shall also apply to every person who, owing to external aggression, occupation, foreign domination or events seriously disturbing public order in either part or the whole of his country of origin or nationality, is compelled to leave his place of habitual residence in order to seek refuge in another place outside his country of origin or nationality*." (UNHCR)

Hence, there has been an international attempt to add new protocols or instruments to The 1951 Convention in order to protect the new types of refugees, which are caused by the new constant realities of the world. Nevertheless, the population displacement caused by climate change is a very peculiar and is seen by many as a total different type of population mobility. In

the past few decades the international community has shown an increase concern in developing a response to climate change through mitigating its drivers and adaptation to the climate change impacts. There have even been attempts made by environmental and legal scholars to create drafts of international treaties which would be the foundation to create a global regime on environmental refugees (such as the one made by Young and Hodgkinson, 2012). However it would simply take much more effort to get the international community to agree on, sign and ratify a whole new treaty than adapting or adding new protocols or provisions to the existing instruments in order to give protection to the 1 billion people which are estimated to be forced to move from their homes due to climate change until 2050 (Westra, 2009). Among the difficulties in creating a new instrument are (Mcadam, 2010):

- The difficulty that exists in identifying the main causes of displacement and thus identifying the migrants as environmental refugees
- The hesitancy of possible destination countries to agree to a new type of forced migrant and sign a convention similar to The 1951 Convention (since it would require them to provide international protection)
- Some countries in Asia-Pacific (among others India and Bangladesh) have not been among the most ready to sign key international migrations instruments (such as the 1951 Convention and the 1967 Protocol)

These problems exist and cannot be eliminated or solved easily, therefore for the time being it would make more sense to have a closer look at The 1951 Convention and to evaluate how this instrument can be used and which are its limitations.

As it was mentioned earlier the convention and protocol related to the refugee status were written a few decades ago when environmental problems and natural disasters were not nearly as acute as they are today. One of the main problems already referred before is that the convention and the definition of refugee only protects those who already crossed an international border which is a problem since most of the anticipated climate change induced movement will be internal and thus not meeting this basic requirement. This is the first crucial limitation which the tool has and would have in case the instrument would be renegotiated or a protocol drafted again.

However, for now, let's have a closer look at the definition and the five grounds of persecution. We immediately have a complex start with the "well-founded fear of persecution" since it is hard to characterize climate change as "persecution". According to the current definition, the persecutor has to be engaging in acts which are a violation of a right because the persecuted has attributes which are linked to one of the five Convention grounds (i.e. race, religion, nationality, social group and political opinion). Thus in summary the requirements are that the level of deprivation amounts to "persecution"; that the persecution is linked to one of the five grounds and that the person's government is unable or unwilling to protect the person from such persecution. These requirements are rather able to handle individual cases of refugee protection and seem to be problematic and not fully adequate in the case of large migrations due to various causes such as environmental disasters and unlivable conditions due to both natural and man-made causes. Fearing persecution is an emotional and an individual sentiment, thus the simple fact of belonging to the affected group should be enough. Goodwin-Gill (1996) as cited in Westra (2010) suggest that: "*Persecution results where the measures in question harm those interests [protected interests] and the integrity and inherent dignity of the human being to a degree considered unacceptable under prevailing international standards*."

It can be argued that for the most part environmental disasters or environmental conditions that might cause a territory unsafe or unlivable are not the direct result of deliberate persecution by national or regional governments. Nevertheless if some of these conditions occur within a territory with a governmental body it could be claimed that the government allowed the activities that produced hazardous results. One example was given in previous chapters when analyzing some of the situations in India, China and Bangladesh where developing projects do force population migration and damage the environment and living conditions of the remaining ones in those areas. It can also be debated that when governments make deals their interests and those of multinational corporations or other foreign interests that they are failing in their most basic obligation of protecting their citizens and thus be ultimately complicit in the harms that are caused. Nevertheless 'finding' the persecutor is not as simple as this. Some of the poorer countries are the ones which suffer the harshest climate change consequences and which have the highest number of internal displaced people due to sudden-onset environmental disasters or to slow-onset environmental degradation. These countries and other actors argue that the

persecutors are the international community and the industrialized countries in particular since they are the ones which do not manage to reduce the greenhouse gas emission (Mcadam, 2012). Greenhouse gas emissions know no boundaries, thus the fact is that most of the biggest greenhouse producers are not as affected by its consequences as the poorer countries are.

Hence this new link made to a persecutor outside of the country from which flight occurs is the opposite of the traditional refugee paradigm: where as, The 1951 Convention refugees many times flee their own governments of actors from which the government cannot protect them from, those escaping the consequences of climate change do not escape their governments and many times seek refuge in the countries which contributed to their "persecution" or climate change. Thus when thinking about which countries should share the climate refugee burden there could be a quota of how many climate refuges each country would have to admit depending on how much CO2 those countries emit. This of course would be only one of the solutions to handle the climate change and its adaptability because this alone would not force states to reduce their emissions or to protect the environment. Nevertheless, The Australian Review Tribunal (RRT) has rejected the argument that the greenhouse gas emissions amount to the "persecution" for the purposes of the Refugee Convention (Mcadam, 2012):

> There is simply no basis for concluding that countries which can be said to have been historically high emitters of carbon dioxide or other greenhouse gases, have any element of motivation to have any impact on residents of low lying countries in Kiribati, either for their race, religion, nationality, membership of any particular social group or political opinion.

As for the governments of the people who are forced to move (inside or outside of their borders) they are not as much the persecutors but they are rather unable to protect their citizens and this is the main issue. A State is not solely responsible to guarantee all human rights to a person but in general and in a neoliberal context, state protection is an integral component of human rights. Nonetheless persecution alone is not enough to be given the status of refugee, thus let us have a look at the 5 grounds.

RACE

Although some countries are more affected than others by the climate change effects, these impacts are largely indiscriminate and not affect only people of certain background or beliefs. Racial and ethnic backgrounds are often the reason for persecution of larger groups however in the case of climate change the impacts affect people regardless of their race or nationality. Nevertheless there are groups of indigenous people such as the Inuit that are seeking for help in international courts claiming that countries which are the main contributors to their hazardous living conditions should cease those activities which harm the environment. They also claim that those activities are in breach of major human rights instruments such as the Universal Declaration of the Human Rights, in which Article 25 states (United Nations, 1948):

"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."

Due to the breach of human rights the Inuit want the perpetrators to be punished and to be forced to offer compensation and mitigation for the current circumstances of the people in the circumpolar north (Westra, 2010). Nevertheless, superior courts around the world have stated that The 1951 Convention does not cover people in search for better living conditions or people who are victims of natural disasters or environmental degradation since there is no direct persecution and a well-founded fear based on the 5 grounds. In her work, Westra (2010) claims that indigenous people could blame governments or corporations and use race as a well-founded fear of persecution, however this suggestion would only protect a limited group of environmental refugees (leaving out all the other non-indigenous people and all the IDPs).

NATIONALITY

The same issue with race happens with nationality. It is very hard for someone or a group of people to claim that they are suffering the consequences of climate change due to their nationality. To different extents global warming and climate change is hazardous to all the citizens in the world thus making it difficult to claim a well-founded fear based on people's

nationality. It is each States obligation to provide protection to its citizens, to regulate and restrain the industrial activities that are major sources of these harms and which are generated by domestic and multinational corporations.

RELIGION, SOCIAL GROUP AFFILIATION and POLITICAL OPINIONS

Religion is a personal and internal experience and it can be stated that generally any religion can be practiced anywhere in the world. There are certainly holy places for each of those religions and which believers can visit, however in an overall people can practice their in most places around the world. Moreover, as in the previous two grounds of persecution, it would impossible to relate religious believes with climate change induced migration. The exception could be made with would certain indigenous groups which have their own kind of relationship with their land and whose religion is not portable or transferable to another area. In reality Canada and the US already make specific reference to aboriginal religious believes in their Alien Torts Claims Act (ATCA). Even internationally their religious rights and cultural integrity are protected in the mandate of the International Covenant on Economic, Social and Cultural Rights (ICESCR). Hence the indigenous people could claim that their forced flight from their areas is an attack on their religion or group affiliation, nevertheless The 1951 Convention does not include them. They will mostly remain IDPs or environmental refugees, which is not a category recognized by the convention.

As for the ground of being persecuted for political opinions the same complexity applies. Some people might be against or in favour of a capitalism or communism – which both can be blamed as the source of all the development activities which create hazardous conditions to our environment and climate. Nevertheless being against these systems and their practices is never going to be a well-founded fear for those who are forced to move due to climate change. Indigenous people might state that corporations and capitalistic governments might try to influence and disrespect their world view by trying to force development projects in their territories. However, their worldview which sees their territory as held in common and not individually is not seen as a political opinion and is usually not respected at all by governments and big corporations. Indigenous people in Latin American countries are usually victims of development projects and are forced to move becoming IDPs.

The current 1951 Convention has very limited capacity to include environmental refugees in its protection. The only way these people could apply for a refugee status and be considered as such is if they are victims of other types of persecution which might have been actually a result of environmental degradation. Furthermore, the fact that the "fear" has to be plausible and reasonable at the time of seeking for refugee protection, might be a problem for pre-emptive movement as a result of slow-onset of environmental degradation. The 1951 Convention itself has not been signed and ratified by many Asian countries and it has no mechanism that it can employ in order to ensure compliance from states since it relies on their goodwill. Moreover, most of the countries try to prevent migrants from reaching their borders so many of them don't even get the chance to be heard and expose their reasons for their displacement. The most vulnerable are the poor and those in developing countries who do not have many options to adapt to the slow degradation of their environment or to the increasing number of sudden-onset environmental disasters. Consequently those people flying their homes because of climate change are not protected at all since the current international legal refugee regime neglects the correlation between environmental degradation and human migration. As Falstrom (2001) cited in Westra (2010) says:

> *"The Yanomani people in Brazilian rainforest, the Ukrainians around Chernobyl, the Indians affected by the Bhopal disaster, Nicaraguans whose homes were destroyed by Hurricane Mitch, Ethiopians, Rwandans and Somalis suffering from drought and lack of sustainable agriculture, Central Asians harmed by years of poor Soviet agricultural practices, Nigerians suffering from increased pollution and the loss of their land, due to government policies towards oil companies – all these groups of individuals have one thing in common: they have been displaced, forced to move from their homes and traditional habitats due wholly or in part to environmental reasons... We are all responsible for the environment and the environmental degradation on this planet, and therefore it is our responsibility as a global community to assist those who suffer the most as a result."*

Hereby, we can accept hypothesis number 4. The 1951 Convention is a tool created in a different context and does not match the new realities of the XXI century. Moreover, from a legal perspective it is going to be hard to define which was the real cause for the movement (if

the environment or people's vulnerabilities) and to prove scientifically if climate change is the sole responsible for people being forced to move. Nevertheless this tool offers certain aspects which can be helpful in the creation of a protection instrument to environmental refugees: its standard of proof ("well-founded fear"), the possibility of a durable solution, non-refoulement, its rights-based framework, the status it attributed to the people in need of protection and the fact that it is oversight by the United Nations High Commissioner for Refugees (Mcadam, 2012). Apart from its limitations it seems to be difficult to change The 1951 Convention or to add a Protocol which would offer a durable solution to all the climate victims, hence it makes sense to look at other tools which could help protect environmental refugees.

3.1 Other International Legal Instruments

An ideal scenario would require formally binding treaties in order for the environmental refugees to have a chance in front of international courts. Nevertheless this is an unrealistic scenario for now. One of the primary steps towards creating treaties or international bodies which would protect these types of refugees is to recognize and accept the interface between human rights and ecological or environmental integrity and rights (Westra, 2009). Some of the basic human rights will be threatened or not provided to people who are victims of sea level rise, coastal erosion, flooding, droughts and severe weather events such cyclones and hurricanes. Some of the crucial rights affected by these climate change consequences are the right to life, health, housing, culture and means of subsistence. In this regard the instrument which is the basis for many other treaties, international laws and even domestic laws is the Universal Declaration of Human Rights (HRD). This Declaration does not have the power of a treaty nor it has the binding force of a treaty but it has been generally accepted worldwide and it is part of customary international law (general practice accepted as law). Within the declaration there are three articles which might be considered for the protection of citizen's environmental rights (UN, 1948):

Article 3: *"Everyone has the right to life, liberty and security of person."*

Article 14 (1): *"Everyone has the right to seek and enjoy in other countries asylum from persecution."*

Article 25: *"Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control."*

States are the first actors which have the obligation to provide the minimum standards to its citizens in order to enjoy each of the human rights. The right to life is not only in the HRD but also in other key international treaties, conventions and agreements such as the International Covenant on Civil and Political Rights (Article 6, ICCPR), Convention on the Rights of the Child (Article 6, CRC) and all regional human rights treaties (European, American, Arab and African regional treaties). It has been declared by the United Nations (UN) Human Rights Committee as the "supreme right" which is the "basic to all human rights" and it is recognized a non-refoulement obligation (Mcadam, 2012). Hence global warming, climate change and its consequences to the environment threaten humans' ability to adequate living, access food, proper clothing, housing and the right not to be deprived of means of subsistence (Article 12, ICCPR). The UN Human Right Committee does consider nuclear weapons as a threat to life and this could be used as an analogy to the climate change and environmental degradation context. Hence nothing can be achieved on a legal international arena if the link between environment integrity and the basic human rights is done. In 1972 States adopted the non-binding Stockholm Declaration at the UN Conference on the Human Right Environment, which links human rights, development and environment. Nevertheless few decades later the international law does not have yet a "right to a healthy environment". In this regard, the International Court of Justice and the European Court of Human Rights have recognized that some of the fundamental basic rights are dependent on whether the environment is capable of sustaining those rights (Mcadam, 2012).

Additionally some regional instruments have recognizes that the right to life is inevitably linked to and dependent on a safe environment:

a) *"All peoples shall have the right to a general satisfactory environment favorable to their development."* - Article 24 of the 1981 African Charter on Human and Peoples' Rights (Organization of African Unity, 1981).

b) *"1. Everyone shall have the right to live in a healthy environment and to have access to basic public services.*

2. The States Parties shall promote the protection, preservation, and improvement of the environment." – Article 11 of the Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights, 1988)

These laws in different regional (and domestic) treaties prove that as stated previously in this work, the international community is increasingly aware of the need to protect the environment for current and future generations. Countries, communities, governments and organizations are aware that humans need a healthy environment in order to have all basic rights related to the physical environment granted to them. Nevertheless these treaties and laws do not tackle the climate induced displacement and do not offer protection to those who are victims of climate change. Thus there is the need to look at which other instruments might provide some type of protection which can be claimed by the environmental refugees.

Getting back to the ICCPR (Article 7) and to the European Convention on Human Rights (ECHR, Article 3) both have articles which prohibit torture and cruel, inhuman or degrading treatment or punishment and both contain a non-refoulement obligation, nevertheless none of them specifies which actions account for "inhuman or degrading treatment" making it impossible to claim which actions that damage the environment account to such acts. There are other conventions related to world heritage, health, social, economic and cultural rights, but none of them provides the needed protection for environmental refugees. Nevertheless, they all include crucial human right laws which must be the basis of the environmental refugee protection.

One aspect to take into consideration is that usually people that are forced to move because of environmental degradation and climate changes happen to stay inside their borders and so are to be considered IPDs. In this regard the question could be raised if the Guiding Principles on Internal Displacement could be a better choice than The 1951 Convention. The Guiding principles would provide protection to the majority of environmental refugees (the ones who do not cross the borders of their countries) since it recognizes the protection of people who have to move internally due to the impacts of natural disasters and conflicts (IPD Guiding Principles, 1998).

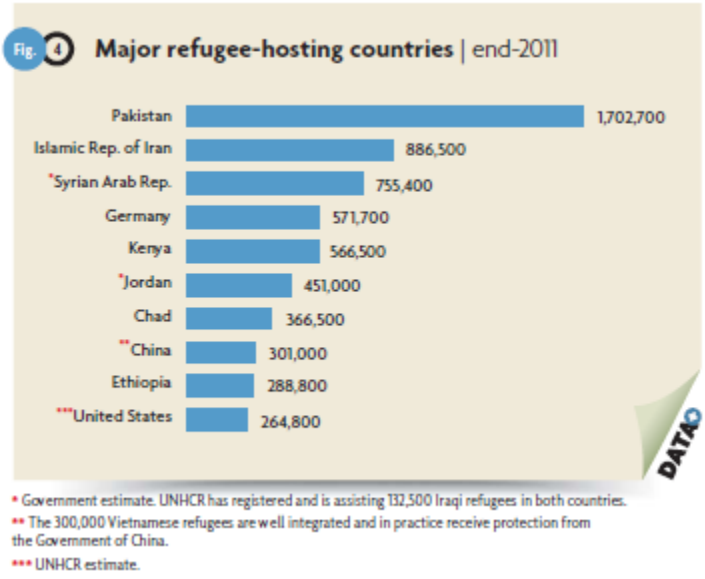
> For the purposes of these Principles, internally displaced persons are persons or groups of persons who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized state border.

Nevertheless there are as well limitations to this instrument since it does not protect those who cross country's borders, it does not protect those inhabitants from the island states, which are predicted to disappear and it does not fully include the idea of slow-onset climate change disaster. Finally it seems less likely that some of the countries which are the most impacted by the climate change would adopt the Guiding Principles into their domestic law since many of them are poorer countries with weak governance and weak society structures.

Regardless if people stay inside their borders or cross their country borders forced by climate change it is hard to predict when the slow-onset changes will affect people's livelihoods to the extent that it is no longer possible to live in those areas. Climate change is an evolving event and people's adaptability to climate change effects will constantly evolve as well, thus making it harder to create some parameters around environmental refugees and when they would be eligible to seek asylum elsewhere. As Mcadam (2012) states, one option could be that *"the assessment of the intensity, severity and nature of future harm, based on the individual's circumstances, is the key factor that leads to refugee status being grated"*. Nevertheless, Mcadam's suggestion does not include the group migration aspect. Basing key aspects of a definition or a legal instrument dependent on individual circumstances would make it harder for families, groups of people and whole societies (in those islands in danger) to have the refugee status granted in a quick and efficient manner and not being stranded in a limbo somewhere.

There is an increased awareness that climate change is irreversible and that environmental refugees exist and the numbers are going to inevitably increase in the future. Hence the focus is no longer exclusively on the protection of the environment but it is shifting slowly to those affected by it and how they can be helped and protected (Mcadam, 2010). The countries which are the biggest emitters of Greenhouse gas are the ones with the biggest capacity

to adapt to the climate change effects which hopefully will increase their moral responsibility towards those who suffer the most from it. These same countries are the ones which will be the most resilient in collaborating and signing international agreement on environmental refugees. Even if they are the ones contributing the most to the negative externalities of the greenhouse gas emotions, they have better capacity to adapt and watch how others get very damaged by those externalities. Moreover, they also do not see refugees as a major problem since they are not among the ones which usually have the highest number of refugees, as the latest UNHCR (2011) report shows:



In general, it is hard to say which current instrument would help better the environmental refugees, since all of them have some limitations which would not cover all aspects of the required protection to all different populations at risk of becoming part of that type of refugees. There are some scholars who proposed a Draft Convention on the International Status of Environmental-Displaced Persons (Westra, 2010 – Appendix 3); nevertheless getting such an instrument approved and ratified does not seem to be in the plans of the international community. A new protocol to the The 1951 Convention would probably have a quicker acceptance, however it is not to forget that countries such as Bangladesh have not signed nor ratified this convention. For the moment environmental refugees might be best protected on a regional, national and local level (we will have a closer look at the governments'' role in the next chapter). Eventually enough protection efforts and practices are done on an international level that some of those

practices would become accepted as customary international law. Finally, the movement of environmental refugees should be seen as an adaptive measure instead of a weakness.

4. The Role of National Governments and International Organizations

National governments have duties towards their citizens, not only because of international and national laws and treaties (as mentioned in the above chapters) but as well from a moral perspective. Trying to determine and internationally recognize whose "fault" it is that climate change is happening causes very heated debates across the globe between governments, corporations, scholars, national and international organizations. Nevertheless, since a healthy environment can be considered a public good, there is a need for collaboration, a need to minimize pollution and development externalities and a need to protect people who will suffer the most from the environmental degradation.

The United Nations as played a crucial role in managing many of the initiatives on a global level. The official kick off made by the international community was made in Rio de Janeiro in 1992 when 172 States and around 2400 non-governmental organizations participated in the United Nations Conference on Environment and Development (UNCED) – or Earth Summit - took place (UN, 1997). There are two crucial principles of the resulting *Rio Declaration:*

Principle 2: *States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental and developmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.*

Principle 3: *The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.*

Prior to this conference the international community showed its willingness to preserve the environment in a conference help in Stockholm in 1972 out of which the *Stockholm Declaration* was signed (or the official name Declaration of the United Nations Conference on the Human Environment). Nevertheless it was in Rio where the first key outcomes were made:

- *The Rio Declaration on Environment and Development*
- *The United Nations Framework Convention on Climate Change (UNFCCC)*
- *The United Nations Convention on Biological Diversity (CBD)*

The CBD is an internationally legally binding treaty which consists mainly of the following (UN, 1992):

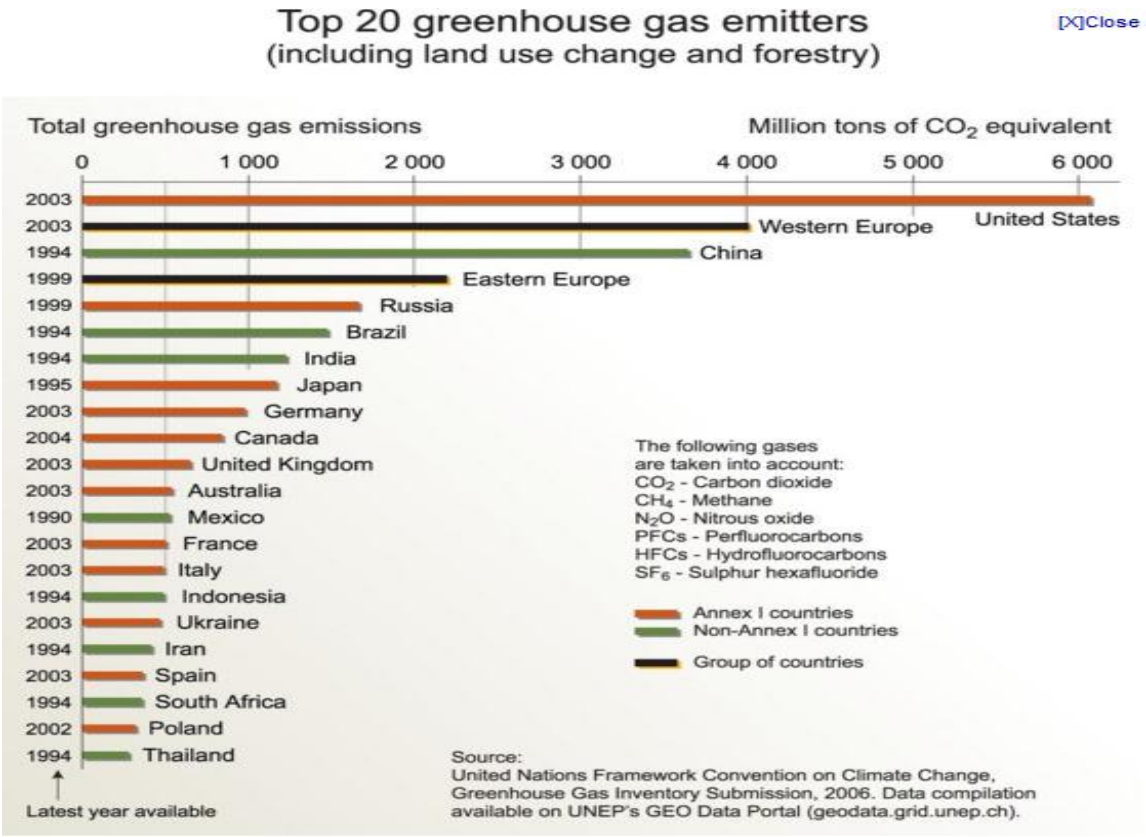
> The Convention is thus the first global, comprehensive agreement to address all aspects of biological diversity: genetic resources, species and ecosystems. It recognizes, for the first time, that the conservation of biological diversity is "a common concern of humankind" *and* an integral part of the development process. To achieve its objectives, the Convention, in accordance with the spirit of the Rio Declaration on Environment and Development, promotes a renewed partnership among countries. Its provisions on scientific and technical cooperation, access to genetic resources and the transfer of environmentally sound technologies form the foundations of this partnership.

The CBD's governing body is the Conference of the Parties (COP) which consists of all governments and international organizations which ratified the convention. Since 1996 the COP has been meeting every two years. The agenda for each meeting is greatly varied; however, at the end of each conference the biggest environmental defenders are never totally satisfied with the outcomes. One of the considered successful COP meetings was the COP17 United Nations climate change summit which took place in 2011 in Durban, South Africa. Since the major international treaty related to climate issues, The Kyoto Protocol (which is mentioned further in this chapter), was approaching its end in 2012, the Parties to the meeting agreed to forge a binding global climate deal by 2015 and a $100 billion per year fund overseen by the World Bank to help poor countries fight and adapt to climate change (Marcacci, 2011).

As for the UNFCCC, its main goals are summarized as follows (UNFCCC, 1992):

> The ultimate objective of this Convention and any related legal instruments that the Conference of the Parties may adopt is to achieve, in accordance with the relevant provisions of the Convention, stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system. Such a level should be achieved within a time-frame sufficient to allow ecosystems to adapt naturally to climate change, to ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

To achieve the ultimate objective there was a major protocol created – the very well-known Kyoto Protocol signed in Japan in 2000. This Protocol committed countries to reduce the greenhouse gas emissions by an average of 5.2% compared to the 1990 values over the 5 year period of 2008-2012. The agreement entered into force in 2005 after being ratified by 127 countries (The Research Council of Norway, 2010). One major failure of this binding agreement was the fact that the United States, one of the top greenhouse gas emitter did not ratify this protocol. Here a glance at the total greenhouse gas emissions by various worldwide countries around the beginning of the new century:



Hence, having one of the biggest emitters not wanting to commit to such a type of initiatives it makes it very challenging to achieve the set goals. The main reason for the US not signing it was that being part of this commitment would damage the US economy. In a country where corporations from all kinds of industries have so much lobbying power it will always be a challenge to have this major player sign any binding international agreement which would limit its mass industrialization efforts. The United States will have those such as Al Gore defending the importance of the environmental protection and the need to reverse the climate change. The international community recognized his efforts and his movie "The inconvenient Truth" by awarding him and the U.N.'s Intergovernmental Panel on Climate Change the 2007 Nobel Peace Prize. Even President Obama, who puts climate issues high in his agenda, has also been unsuccessful so far in gaining approval for climate legislation that would pave the way for the US to sign a new climate agreement (Amundson, 2010). Other major players whose economic interests were as well in play such as China, India and Brazil did end up signing the protocol keeping in mind the interest of our common home: the earth.

Many of the countries, which signed the Kyoto Protocol were successful in cutting emission, however the CO2 levels are now up to 35 percent since 1997. Most of that increase is to be attributed to the countries which did not sign the protocol. China and India are now the world's first and third largest emitters respectfully, with the U.S. falling from first to second. During the COP17 the European Union tried to get the Kyoto Protocol target extended until 2017 but in 2012 many countries let their targets expire with the expiration of the protocol itself. These defections threaten to limit reductions even further – in the 1990s Kyoto accounted for 33 percent of world CO2 emissions. After 2012, it will only account for 15 percent (Marcacci, 2011). The latest UN climate meeting was held in Rio de Janeiro in 2012, called *Rio + 20 The United Nations Conference on Sustainable Development*, to celebrate the 20 years of the 1992 Earth Summit. The declaration "The Future We Want" was one of the major outcomes of this conference. Moreover there was a plan for "Sustainable Development Goals" to succeed the UN's Millennium Development Goals, which expire in 2015. The Millennium Goals were a promise made by 189 nations in 2000 and these consist in (UNDP, 2000):

1. Eradicate Extreme Poverty

2. Achieve Universal Primary Education

3. Promote Gender Equality and Empower Women

4. Reduce Child Mortality

5. Improve Maternal Health

6. Combat HIV/AIDS, Malaria and other diseases

7. Ensure Environmental Sustainability

8. Develop a Global Partnership for Development

These types of conferences led by the UN do not have the results that our planet and people from all civilizations need. Moreover, the discussions do not really focus enough on the topic of environmental refugees, leaving millions of people without protection and without a solution in sight. In this regard, Mcadam (2010) fears that if an agreement to reduce the greenhouse gas emissions would be reached and if the climate related migration would be included in the same agreement that states could see the affected people as tradable currency like carbon credits: *"States might willingly pay to resettle people in order to keep emitting, which*

would also undermine sustainable mitigation and adaptation measures". This statement is not totally false from the possible reality since each country has its own interests. Each country wants to be at the top of the international economy and little sacrifices will be done in order to achieve and international agreement which will make everyone commit to rigid actions which would ensure an environmental sustainability. The only way to oblige those countries would be if they would be made legally accountable for causing the environmental harms and then being obliged to remedy it (Mcadam, 2012). Among the difficulties to even reach such a scenario is the fact that the international community didn't limit the greenhouse emissions until recently. Moreover it would be difficult to quantify the harm caused be the emissions of each state or to prove that the gases emitted by the United States for instance did affect the people in Bangladesh or any other specific country.

The European Union is one of the major players from a States' perspective defending the idea of sustainable development and the idea of achieving an international agreement. It actually was the main driving force to get the UNFCCC and the Kyoto Protocol treaties signed by so many countries. During the 2012 Rio +20 meeting they put the concept of "Green Economy" on the table and earlier in 2007 the EU leaders had committed to validate an "*approach to climate and energy policy in order to transform Europe into a highly-efficient, low carbon economy. They made a unilateral commitment that Europe would cut its emissions by at least 20% of 1990 levels by 2020. This commitment is being implemented through a package of binding legislation*." (European Commission, 2010). Some European countries have been front-runners identifying the need to protect the environmental refugees. The Belgium Senate adopted a resolution in 2006 which had the purpose to challenge the UN to recognize an international environmental refugee status. Some senators opposed the resolution because it did not tackle the root causes of the problem. In 2008 two other resolutions were introduced one of them calling for a Protocol to the 1951 Refugee Convention. The vote on this resolution is still pending and if it would be passed it would be non-binding on the Parliament. (Mcadam, 2012) Nevertheless this is just one example of the several attempts made by individual states to give some sort of protection to environmental refugees since they are the victims of all the environmental degradation cause by climate change.

Throughout the last couple of decades many meetings and conferences were held, regional and national attempts are made to tackle the climate and environmental problem, but states have not been the only players in all of these negotiations. Non-Governmental organizations have played a crucial role early on by educating the general public and making them aware of the problem. For many years people were very skeptical when hearing about "global warming" and all its consequences to the ecological sphere. Hence the role of the NGOs was crucial in this regard since they were exposing the problem to the media and investing a big effort to educate the general public. During the COP-1 there were 191 accredited NGOs as observers, but just a few years later at COP-6 there were over 530 which exemplifies the rapid increase of the number of NGOs involved with the climate protection (Carpenter, 2001). Throughout the years they have held protests, rallies and demonstrations in order raise awareness and call for action. Nevertheless measuring the impact of the NGOs on the international negotiations is very difficult since they do not attend as one unified front representing the same goals and priorities.

The international community is nowadays more aware and it is important to ensure environmental sustainability in order to guarantee acceptable livelihoods for all future generations. Corporations across the world can no longer ignore this urgent and loud "need" and therefore many of them are introducing environmental friendly initiatives. This certainly helps with their image towards the public, however the question is if all the major corporations will do the same efforts to have a "greener production". Major oil companies such as British Petroleum, the Shell Group and a French oil group have pledged to try to reduce greenhouse gas emissions. Nevertheless there is no international body which obliges company to initiative this type of activities leaving it up to each company's will and social responsibility strategy. Other companies are seeing renewable energy as an opportunity to be successful in the world market, not only it creates more jobs but it helps the economies of those countries working in sustainable and renewable energy (such as Brazil). Producing green solutions could help societies in an economic, environmental and political level.

As for the other players, besides the major organizations such as the UN (and all its agencies, programs, frameworks and conventions), the EU and other regional organizations and

players, there are many international organizations which were created to help protect the environment and even people displaced by natural disasters. To mention just a few: Earth Charter, World Conservation Union, Inter-Agency Standing Committee (IASC), The European Court of Human Rights, International Hydropower Association, Intergovernmental Panel on Climate Change, International Institute for Applied Systems Analysis. One of the problems that exist is that there are too many international treaties, too many organizations and too many players trying to do things separately and by their own initiative. This will make it difficult to get the needed attention towards the environmental refugees. As long as there is not a single international body or agency created to manage the climate change consequences and to manage the climate-forced migration very little will be achieved. Countries, corporations, regions will continue having their own programs and initiatives and there will be no single international voice echoing the solution to tackle the environmental degradation and the environmental refugees problem. While there is no agreement on protecting the environmental refugees the security and peace are threaten in several place of the world. Cross border migration will increase tensions between groups of populations and increase the chance of even armed conflicts. It will be crucial to have specific solutions by 2015, as it was partially suggested in the last official climate related conferences.

4.1 Eritrea, small example to follow?

Some governments are taking more initiatives than others in order to protect their environment their citizens' livelihoods. We already had a look at Bangladesh, a country in South East Asia, which only produces 0.2% of CO_2 (Worldbank, 2010) but one of the countries at higher risk of being affected by all kinds of damage to its ecological system. It is a country where its government still has a lot of work ahead and has a government, which has to put its people ahead of the corporate or government interests. Let's now have a look at a country which has been making a significant progress in various fronts of its ecological problems.

With a current population of 5.6 million over an area of 124,320 sq km (including Dahlak archipelago), having as its capital the city of Asmara, Eritrea is located in the Horn of Africa, a country which is by the Red Sea and which has its borders with Sudan, Ethiopia and Djibouti. The country came into existence in 1890 as a colony of Italy. In 1941 the British took over the

country and it was under the British administration until 1950, the year in which the UN General Assembly decided that Eritrea and Ethiopia should become a federation under the sovereignty of Ethiopian Crown. However in 1962 the federation was abolished and the country was absorbed by Ethiopia. As a consequence two revolutionary groups were formed: the Eritrean People's Liberation Front (EPLF) and the Eritrean Liberation Front (ELF). Even if both groups had the same goal, which was getting the independence for Eritrea, they battled and the EPLF defeated the ELF and pushed it into Sudan where it then dissolved. In 1991 the EPLF with the help of another group managed to fight the Ethiopian government and take control of Eritrea. A UN referendum took place a couple of years later (in which 99% voted in favor of the independence) and Ethiopia recognized on May 2nd 1993. (FCO, 2012) Hence, as Bangladesh, it is a country which had to battle for its independence and both are countries which did not get their independence too long ago, however the transitions was made differently and there is more population diversity in Eritrea (a country with a much smaller population than Bangladesh).

In Eritrea, the 30 years of war to leading to the independence played an important role on how peaceful the transition was done. The guiding principles announced by the leaders back then were unity, secularism, nationalism, self-reliance and pragmatism. (Iyob, 1997) After independency was officially declared, there was an effort to implement affirmative policies related to gender and ethnic and decrees announcing a separation between state and religion. Christians, Muslims and people from different ethnicities live side by side in harmony and respecting each other's beliefs and backgrounds. The country seemed to set the example for many other nations in its continent and Bill Clinton even called its new leader, Issaias Afwerki, as a "renaissance African leader" after the long battle for independence. (The Economist, 2009)

The country's land and infrastructure had been strongly damaged during the long independence war. When in power, the government tried to solve these war consequences by implementing several programs which were supposed to help rebuild the country. One of the reforms that we want to have a closer look at for the purposes of the paper is the Eritrean Land Reform. When the country released itself from Ethiopia in 1991, it started planning a land reform, which would finally be implemented and publically proclaimed in 1995. The country's geography influences the use and the value of its land. There are three areas: the highland

plateau (where agriculture is practiced), the Western lowlands (where pastoralism and agropastoralism are practiced), and the Red Sea coastal area (where pastoralism is practiced). Each of these areas has a predominant group of population: Tigrinya-speaking Christians in the highland plateau, the Beni-Amer and others pastoralist groups in the Western lowlands, the Afar and Saho Arabic-speaking populations in the coastal areas. (Fullerton Joireman, 1996).

Before this latest land reform was proclaimed, the country has had several land reforms throughout the years, all resulting as inefficient. It started early with the Italian settlers when their land reform has as main aim redistributing the land to the Italians. There were two systems implemented in the plateau area (Fullerton Joireman, 1996):

Risti – a communal tenure system which restricted land access to any peasant who was a descendent from the first settlers of the community

Diessa – a residence-based communal tenure system in which land was allocated on a rotational basis every five to seven years to all the residents of the village

When the British arrived they tried to implement individualized land holdings rather than having the preference given to groups of people. Nevertheless, the Brits didn't stay too long. After the Brits left and until the Land Reform Proclamation there were multiple and inconsistent land rights which didn't help the agriculture or pastoralism in the country. It created insecurity which would damage the agricultural production and people's livelihoods. After the official independence declaration in 1993 the ruling movement, the EPFL, created an Eritrean Land Commission, which had a mission to create a land reform. Diessa and Risti were not considered valuable options and The Land Proclamation announced a system of individual lifetime usufruct rights but in which the government is the landowner. Land could also be made available to be leased to investors and could be used by the government as mine and forest reserve (Fullerton Joireman, 1996). The other breakthrough part of this proclamation was the fact that land was to be distributed without discrimination to every citizen regardless of sex, race, clan or beliefs. They would have land for housing, business or agriculture and it would be theirs for their lifetime. The government wanted to encourage individuals to do long-term investments to the land and it determined that each child who would inherit land from their parents would have to

give up any other land they had received by the government. The idea was to have a land reform which would not only help the citizens but as well implement agricultural stability which would then help the country's economy. The proclamation had its flaws from its creation though. The government did not include the needs of the people in the lowlands who are usually nomadic pastoralist and agropastoralist. Another aspect lacking was promoting sound environmental management practices and sustainable agricultural development, which would at least counter balance the already harsh soil condition in the country. Throughout the last decades the country was unable to produce enough food for its people, even with three different types of land ownership, the government was unable to adopt initiatives which would help its people adapt to the increasing soil degradation and soil erosion which partially are caused by climate change (and partly by the poor use of it).

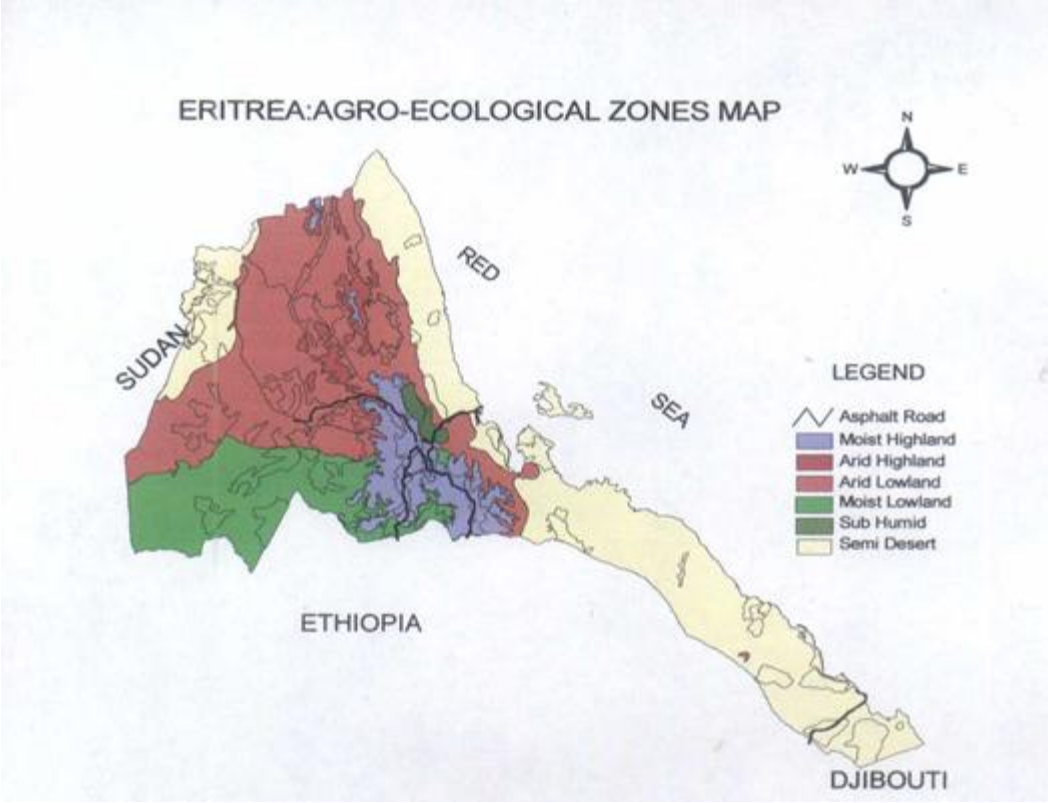
In a country where transition was still happening and where tensions with Ethiopia never had fully vanished, the expected economic prosperity didn't last too long. In 1998 Eritrea and Ethiopia started a border dispute around the town of Badme, which lasted 2 years and left thousands of causalities on both sides (BBC, 2012). In this case, yet again, we have an example of how access to natural resources or the geographic location can create tensions between states. Ethiopia no longer has access to the Red Sea and it needs to go through other countries such as Eritrea in order to ship its goods and trades. This continuous border tension affects people and the capacity of the government to provide food for everyone. Moreover, the country suffers from severe droughts, which cause poor harvests and today it is one of the most food aid dependent countries in the world. (IRIN, 2005) In 2005 free food distribution was stopped and in 2006 the country's president Isaias Afwerki in an attempt to become self-reliant introduced the concept of "cash-for-work". This program was introduced based on his point of view that the international community had been using food for political pressure. After being internationally proclaimed a hero immediately after the independence war, 30 years later he is ruling the country without allowing political opposition and almost in a dictatorship style. In 2009 the UN imposed sanctions on Eritrea for backing up anti-Ethiopian armed groups in Somalia. The measures included an arms embargo on Eritrea, travel bans on the country's top political and military officials, and the freezing of assets of some of its senior political and military officials. (UN News Center, 2011)

> *Eritrea's detractors say it has become a pariah in the mould of North Korea. A one-party state, it jails and even kills those of its citizens with independent minds. It conscripts its young into armed forces far bigger than it needs. At least it has no nuclear ambitions. But it exports instability and inflates its sense of importance by backing rebels in Chad, Ethiopia and Sudan, as well as Somalia.* (The Economist, 2009)

In the middle of this political crisis people are the ones suffering the consequences of its regimes actions. As mentioned earlier, in 2004 the government cut free food distribution by 94% - from 1.3 million people to 72,000 (IDMC, 2006). In 2005 there are reports that 2.3 million people, i.e., two-thirds of its population needed food aid. (UN News Center, 2005)

Eritrea and Bangladesh both make part of the group of countries which are the most vulnerable to the climate change adverse impacts. Both countries have a very different climate and ecological problems since they are geographically in very different areas. Eritrea's biggest vulnerability is related to its geographical location which is the arid and semi-arid region of the Sahalian Africa and its little capacity to adapt to climate change adverse impacts. Eritrea's major environmental issues include (The Earth Encyclopedia, 2012):

- deforestation (unsustainable forestry practices, and the over exploitation of wood products for use as fuel without planting new growth);
- desertification (overgrazing, loss of agriculturally productive soils, or climate change);
- soil erosion (by the action of water or wind, compounded by poor agricultural practices, deforestation, overgrazing, and desertification);
- overgrazing; and,
- loss of infrastructure from civil warfare.



Source: FAO, Ministry of Agriculture 1997

In the beginning of the 21st century there were four very harsh years with extreme droughts which threatened the very existence of more than one third of the population. Crop production fell to about a quarter of the average of the previous ten years and large numbers of livestock died or were sold off relatively cheaply to pay for food. However, even in years where there is satisfactory rainfall the country has to import half of its food. (IFAD, n.d.) Hence, the land reform and the prosperity forecasted after the independence were nothing but failed attempts to tackle the food supply problems in the country.

The country being led by an almost authoritarian leader is being isolated from the rest of the international community, but its dependence on international aid is too big. International organizations and agencies such as the United Nations Office for the Coordination of Humanitarian Affairs (OCHA), The Food and Agriculture Organization (FAO), The United Nations Development Program (UNDP) among others, are working together with the government to ensure the sustainable use of natural resources and to working to develop

programs which will increase the countries' adaptability to climate change. The country has commitments towards the UNFCCC and in 2007 the Ministry of Land, Water and Environment presented a National Adaptation Program of Action (NAPA) to climate change. (UNDP, n.d.):

> Over the last decade Eritrea has made considerable progress with the support of UNDP in different fronts such as, studying its Coastal Marine and Island Biodiversity resources and establishing an Integrated Coastal Area Management framework; piloting viability of application of renewable (Wind) energy technologies in Eritrea that can be further replicated, Land use policy formulation and demonstrating effective sustainable land management practices, ; awareness raising in combating desertification and climate change impacts in development plans enabling Eritrea to fulfil its commitment to UNFCCC…

Eritrea's government should now use the chance to become an example to follow. It should set the political differences aside, it should stop focusing on potential armed conflicts with Ethiopia and oblige military service for its men taking them away from their village and families and it should educate its people to become aware of the environmental challenges caused by climate change and train them to practice and develop sustainable development solutions and increase their adaptability to the ecological hardships they are faced to. Nevertheless this will less likely happen while there is no real democracy, while no opposition is allowed, while the country is suffering sanctions by the UN, while it focuses its energy in controlling its population and while creating tensions with the neighboring countries. Independently of the harsh geographical location the government is the ultimate responsible for protecting its people and its environment.

4.2 Environmental Security

After all the chapters, at the core of the whole problem is the security of people, of the ecosystem, of states and the planet. Many scholars have tried to analyze the connection between conflicts and climate change (Soroos 1994, Martin 2005, Gleditsch 2012, Raleigh and Kniveton 2012). During the Cold War security focused on the military threats when the world was dominated by the East-West confrontation and the nuclear tension. There was limited view to

today's sense of security which became broader and now implies freedom and protection from serious threats to human well-being. As mentioned earlier over the past few decades the international community is noticing the sense of urgency and the threats that climate change pose to the human well-being and the ecosystem in general. As a result scholars, activist and even politicians refer to the "environmental security" as a priority in the international arena (Soroos, 1994). This thesis defines a healthy environment as a public and common good based on Olson's definition that if any person consumes it, it cannot physically be withheld from the others in that group (Olson 1971). A healthy environment is necessary for human well-being for the current and future generations. Its value is very high, if not crucial for the earth's existence as it is. Actually all the countries agree that the preservation of the environment is crucial and that is why there have been many meetings throughout the past decades. Nevertheless, as it was mentioned earlier, the agreements reached so far have been very limited and it takes years to actually get all the countries to agree on a global agreement to reduce human-induced pollution and damage of the environment.

In the context of security, even if many scholars have tried to prove that environmental and resource problems can increase international and domestic tensions, little has been done to mitigate these risks. Soroos is one of the scholars who has a closer look at this situation. He compares the current the current global warming situation to the Prisoner's Dilemma game. The non-cooperating countries become "free riders" that benefit from the environmental public good of "less climate change" that is created by other countries. According to Olson the problem with large groups, in this case the group of all the world nations is that it is hard to convince each individual (country) that their contribution will make a difference. Countries will try to get the public good, a healthy environment, counting on other to take the necessary measures to minimize the human-made contribution to climate change. Nevertheless, the difference with this specific public good is that it has no borders. The gasses emitted by one country are released to the atmosphere and affect climate as whole. The countries which are more capable of adapting to sudden and slow-onset disasters usually prefer to watch for their economic interests than for the global common good. One very famous example was when the United States did not sign the Kyoto protocol so that they could emit gases without restrictions, i.e., not reduce their industry production or find cleaner sustainable development resources.

Protecting the environment is part of today's urgency. Prisoner's Dilemma still and Tragedy of Commons are the current behavior patterns of the international community. The exploitation of natural resources, the careless deforestation, and the preference for countries to be free riders and not limit their development will increase the number of environmental refuges which on the other hand will increase tensions with host communities.

4.3 Summary

In this chapter we were able to accept hypothesis number 5. The international community has to come together to find a solution which will help the different nations, with their different needs and vulnerability levels adapting to climate change. People and governments in more vulnerable countries have a strong adaptability will, however there must be political stability and a global effort to use technology, innovation and to create international funding for creating solutions for the mitigation and adaptation to climate change. With the case study of Eritrea, we had the chance to see that countries might attempt to create reforms which are meant to help the country's economy and population. Nevertheless, without international help and without a stable democracy and government, very little can be done a long term.

The international community has obligations to the world citizens who are entitled to basic human rights. Pollution, deforestation, sea level rise, droughts, floods and soil erosion are among the global externalities of many of the public goods provided for today's societies. One of the most prominent scholars on environmental degradation, Jeffrey Sachs[9], believes that the polluters (big corporations) must pay to the poorer countries which are the most affected by these externalities (Sachs, 2012). In summary, even if hypothesis 5 can be accepted, the reality is that there is still a long way until an international agreement with clear goals and compromises can be reached. As long as economic interests come before basic human rights very little can be achieved by the international community. The general behaviour until now goes along with the logic of the Prisoner's Dilemma. Countries act rather in self-interest and it results in sub-optimal outcome for all most of the parties. Olson explains that in larger groups no collective group can

9 Jeffrey D. Sachs, Professor of Sustainable Development, Professor of Health Policy and Management, and Director of the Earth Institute at Columbia University, is also Special Adviser to the United Nations Secretary-General on the Millennium Development Goals.

be obtained without some group agreement, coordination, or organization. Nevertheless some of the members will not be willing to collaborate without having a "selective incentive" (Olson, 1971, page 41). He states further that these incentives can be positive or negative by punishing those who fail to participate for the group's objectives (as J. Sachs suggests) and offer positive inducements to those who act in the group interest.

5. Conclusion

Climate change is not a stagnant phenomenon and it is increasingly damaging earth's ecological system and environment. Since 1992, the international community has gradually become aware of the adverse impacts of those occurring changes within the climate and the environment and it has created different types of agreements and organizations, which are meant to help protecting the environment. Nevertheless, there are many critics of the increasing international efforts to promote sustainable development programs and there is no consensus across international scientific community on what are the most prominent causes of global warming and climate change. This lack of consensus on if global warming is caused by human action and government actions puts a hold on many of the efforts to promote sustainable development programs on a global scale. Several countries, such as the United States did not sign crucial agreements such as the Kyoto Protocol, which makes it very hard to achieve the common goals. Some governments of developing countries do not want to stop growing and there is an increase in development project such as hydropower. These types of projects cause many internally displaced people. We had a look at how international organizations have tried to develop modules and guidelines to manage this type of people's displacement. A successful relocation will mainly depend on the governments and the help of the international organizations involved in the development projects. World Bank's IRR module is a reactive instrument which will not prevent people's lives being disrupted and will not help protect the damages those projects induce to the environment and ecosystem. Nevertheless, this thesis believes that it could be one of the instruments which could be used to assess the areas or regions which are more affected by environmental degradation and help planning migration and resettlement of those who would have to be forced to move. In regards to all the different types of environment induced migration which were analyzed in this thesis - IDPs, Oustees and people who cross the

borders to a different country - this thesis decided to agree with defining them as "environmental refugees" since it the category of "refugee" calls for a more urgent action and for international protection. Nevertheless this also slows down the negotiations around an agreement because many countries do not welcome new immigrants. Moreover, for many countries "refugees" are many times the synonymous of "trouble and tensions". Hence there is the fear that some countries could jeopardize the current 1951 Convention which protects millions of refugees.

With the help of the used methodology, this thesis is also able to accept all hypotheses as true, i.e., there is an increasing displacement of people caused by climate change and development programs; such displacements decrease the living standards of the refugees and have long-term negative consequences to the society in the inflicted countries; the damages spill over to negative international externalities which can jeopardize their security stability; and the 1951 Convention is outdated and does not protect environment refugees. As for hypothesis number 5, which states that in order to mitigate climate change there has to be international collaboration, this is actually the one which exposes the core of the whole problem, which is the current failure of a collective action. In a world where self-interests prevail, the patterns of general behavior failure such as the Prisoners Dilemma and Tragedy of Commons are evident. The suggestion that this thesis makes is that the only solution for these failures is an international Collective Action. The world has an extremely large number of countries, each with their own economic and social interests and agendas. On top of the different states, there are hundreds of organizations and agencies working to obtain the desired protection of the environment, to promote sustainable growth and to help environmental refugees. The United Nations itself has several agencies and bodies which tackle climate change, but the results of the frequent meetings are very slow, and millions of people around the world cannot wait decades for a global agreement to be reached. In order to achieve collective action, there has to be a regulatory body which will set the positive and negative incentives for the common goal. This thesis believes that with the help of the IRR model climate induced migration can be planned, which on the other hand could benefit the host communities or countries (as a positive incentive). As a negative incentive, as Sachs suggests, the polluters must pay and countries have to introduce carbon tax (such as Australia already did). No common good can be achieved without 100% of collaboration. If one country or region (example: the EU) has aggressive plans to limit the carbon

emission, and other countries continue polluting heavily, everybody will feel the negative externalities of our most precious public good – our environment.

6. Acronyms

BBC - British Broadcasting Corporation
CBD - The United Nations Convention on Biological Diversity
COP - Conference of the Parties
CRC - Convention on the Rights of the Child
ECA – Environmental Conservation Rules Act
ECHR – European Convention on Human Rights
ECR- Environmental Conservation Rules
ELF - Eritrean Liberation Front
EPLF - Eritrean People's Liberation Front
EU – European Union
FAO - Food and Agriculture Organization
FCO - Foreign & Commonwealth Office
HRD - Universal Declaration of Human Rights
IASC - Inter-Agency Standing Committee
ICCPR - International Covenant on Civil and Political Rights
iDMC - Internal Displacement Monitoring Centre
IDP – Internally Displaced People
IHA - International Hydropower Association
IIASA - International Institute for Applied Systems Analysis
IFAD - International Fund for Agricultural Development
IOM - International Organization for Migration
IPCC - The Intergovernmental Panel on Climate Change
IRIN - Integrated Regional Information Networks
IRR - Impoverishment Risk and Reconstruction Model
ISIC - International Standard Industrial Classification
NAPA - National Adaptation Program of Action
NASA - National Aeronautics and Space Administration
NGO – Non Governmental Organization
NORAD - Norwegian Agency for Development Cooperation
OAU - Organization of African Unity
OCHA - United Nations Office for the Coordination of Humanitarian Affairs
OECD - Organization for Economic Co-operation and Development
SIDA - Swedish International Development Cooperation Agency
TGP – Three Gorges Project
UN – United Nations
UNCED - United Nations Conference on Environment and Development
UNDP - United Nations Development Programme
UNEP - United Nations Environment Programme
UNFCCC - The United Nations Framework Convention on Climate Change
UNHCR - United Nations High Commissioner for Refugees
WCD – World Commission on Dams
WMO – World Meteorological Organization
WWF – World Wildlife Fund

7. Bibliography

Amundson, B. 2010. *Why the Kyoto Agreement Failed*. [online] The Research Council of Norway. Available at: http://www.forskningsradet.no/en/Newsarticle/Why_the_Kyoto_agreement_failed/1253963392536 [Accessed on 18 June 2012]

Asian Development Bank, 2004. *Country Environmental Analysis Bangladesh*. [online] Available at http://www.adb.org/documents/country-environmental-analysis-bangladesh

BBC (British Broadcasting Corporation, 2012. Eritrea Profile. [online] June 14. Available at: http://www.bbc.co.uk/news/world-africa-13349078 [Accessed 18 June 2012]

BEN (Bangladesh Environmental Network), n.d. [online] Available at http://www.ben-center.org/ [Accessed 16 July 2009]

Bosshard, P., 2011. China's Dam-Building Will Cause More Problems Than It Solves. *International Rivers* [online] Available through: http://www.internationalrivers.org/en/node/6278 [Accessed on 20 March 2011]

Carlier, J.-Y. 1997 *Europe and refugees: a challenge?* [e-book] Available at: http://books.google.com/books?id=syXEf8iuKZsC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false [Accessed 8 November 2008]

Carpenter, 2001. *Greengroups and the Media: The Role of Non-Governmental Organizations in the Climate Change Debate.* [online] Available at www.jstor.org [Accessed 22 November 2008]

Cernea, M., n.d. *IRR: An Operational Risks Reduction Model for Population Ressetlement*. [online] Nepal Journals OnLine. Available at: http://www.nepjol.info/index.php/HN/article/view/883/975 [Accessed on 04 December 2009]

Cernea, M. 1997. *Hydropower Dams and Social Impacts: A Sociological Perspective.* Washington, D.C.: Environment Department, World Bank

Cernea, M. 2004 *Social Impacts and Social Risks in Hydropower Programs: Preemptive Planning and Counter-risk Measure.* Keynote address: Session on Social Aspects of Hydropower Development United Nations Symposium on Hydropower and Sustainable Development. Beijing, China

China Three Gorges Corporation, n.d. [online] Available at: http://www.ctgpc.com.cn/en/benefifs/benefifs_a_7.php [Accessed 29 March 2010]

Cutts, M. 2000. *The state of the world's refugees 2000: fifty years of humanitarian action.* [pdf] http://www.unhcr.org/cgibin/texis/vtx/home/opendocPDFViewer.html?docid=3ebf9bb8e&query=the%20state%20of%20the%20world%20refugees [Accessed 8 November 2008]

Eden Foundation. 1994. http://www.eden-foundation.org/project/desertif.html [Accessed 4 November 2008]

Essed, P. 2004 *Refugees and the Transformation of Societies: Agency, Policies, Ethics and Politics*. [e-book] http://books.google.com/books/about/Refugees_and_the_transformation_of_socie.html?id=Ixn_D2mhxyAC [Accessed 10 November 2008]

European Comission. 2010. *What is the EU Doing on Climate Change?* [online] Available at: http://ec.europa.eu/clima/policies/brief/eu/index_en.htm [Accessed 18 June 2012]

European Parliament. 2008. *Climate change poll reveals 61% have taken action*. [online] Available at: http://www.europarl.europa.eu/news/public/story_page/064-37235-350-12-51-911-20080911STO36944-2008-15-12-2008/default_en.htm [Accessed 15 December 2008]

European Union, 2011. *"Climate Refugees" Legal and Policy Responses to Environmentally* Induced Migration. [online] Available at: http://www.europarl.europa.eu/activities/committees/studies.do?language=EN [Accessed 10 December 2012]

FAO (Food and Agriculture Organization of the United Nations) [online] Available at: http://www.fao.org/desertification/default.asp?lang=en [Accessed 15 November 2008]

FAO, 2002. *Challenges and Opportunities for The World Summit on Sustainable Development: FAO'S Perspective* [online] Available at: www.fao.org/wssd/docs/ChallengesandOpportunityfinal.doc [Accessed 10 June 2012]

FCO (Foreign & Commonwealth Office). 2012. Country Information, Eritrea [online] Available at: http://www.fco.gov.uk/en/travel-and-living-abroad/travel-advice-by-country/country-profile/sub-saharan-africa/eritrea/?profile=history [Accessed 18 June 2012]

Fischer, G., Shah, M. and van Velthuizen, H. 2002. *Climate Change and Agricultural Vulnerability*. IIASA. Contribution to the World Summit on Sustainable Development, Johannesburg 2002

Fullerton Joireman, S. 1996. *The Minefield of Land Reform: Comments on the Eritrean Land Proclamation.* [online] Publish: Oxford University Press. Available at: www.jstor.org [Accessed 22 November 2008]

Gardner, G. T. 1996 *Environmental problems and human behavior*. s.l. s.n.

Gleditsch, N. 2012 Whither the weather? Climate Change and Conflict. [online] Journal of Peace. Available at: http://jpr.sagepub.com/content/49/1/3 [Accessed 6 December 2012]

Healy, H. 2012. Ready or Not: Can Bangladesh Cope with Climate Change? *New Internationalist* [online] Issue 451, April 1. Available at: http://www.newint.org/features/2012/04/01/climate-adaptation-bangladesh/ [Accessed on 4 May 2012]

Heggelund, G. 2006. *Resettlement Programmes and Environmental Capacity in the Three Gorges Dam Project.* Development and Change, Vol 37, No 1, pp. 179-199. [online] Available at: http://www.fni.no/doc&pdf/gmh-dc-2006.PDF [Accessed on 1 December 2012]

Hemig, Paul and Rees 2001, *Reservoir Resettlement in China: Past Experience and the Three Gorges Dam* [pdf] Published by: Blackwell Publishing on behalf of The Royal Geographical Society (with the Institute of British Geographers) Available at www.jstor.com [Accessed on 14 December 2008]

Hovy, B. 2002 *Refugees, asylum-seekers and other persons of concern – trends in displacement, protection and solutions.* s.l. s.n

Hvistendahl, M. 2008. China's Three Gorges Dam: An Environmental Catastrophe? *Scientific American*, [online] 25 March. Available at: http://www.scientificamerican.com/article.cfm?id=chinas-three-gorges-dam-disaster&page=2 [Accessed on 2 April 2011]

IDMC (Internal Displacement Monitoring Centre), n.d. [online] Available at: http://www.internal-displacement.org/8025708F004D404D/(httpPages)/CC32D8C34EF93C88802570F800517610 [Accessed 6 November 2009]

IDMC (Internal Displacement Monitoring Centre), 2006. [online] Available at: http://www.internal-displacement.org/idmc/website/countries.nsf/(httpEnvelopes)/3C803516D3DFAE68C12571760037E901?OpenDocument [Accessed 6 June 2012]

IFAD (International Fund for Agricultural Development). n.d. [online] Available at: http://www.ruralpovertyportal.org/web/rural-poverty-portal/country/home/tags/eritrea [Accessed 13 June 2012]

IFC (International Finace Corporation, World Bank Group), 1990. Operational Directive, Involuntary Ressetlement [pdf] Available at: http://www.ifc.org/ifcext/enviro.nsf/AttachmentsByTitle/pol_Resettlement/$FILE/OD430_InvoluntaryResettlement.pdf [Acccessed on 21 November 2009]

International Accountability Project, n.d. [online] Available at: http://www.accountabilityproject.org/article.php?list=type&type=63 [Accessed on 7 November 2009]

International Organization for Migration, n.d. [online] Available at: http://www.iom.int/jahia/Jahia/pid/8/ServletSearchPublication?typPublication=101&keyWord=&author=&classPublication=162&Publication=&datePublication=0&search=Search&reference=&resultPerPage=25&event=search [Accessed 10 November 2009]

IRIN (Integrated Regional Information Networks), 2005. *Eritrea: Food aid distribution slows down*. [online] October 24. Available at: http://www.irinnews.org/Report/56803/ERITREA-Food-aid-distribution-slows-down [Accessed 15 June 2012]

Iyob, R. 1997. *The Eritrean Experiment: A Cautious Pragmatism.* [online] Available at: www.jstor.org Publisher: Cambridge University Press [Accessed 22 November 2008]

Kane, H. 1995. *The Hour of departure: forces that create refugees and migrants*. s.l. s.n.

Klaus, V. 2008. *Blue Planet in Green Shackles: What Is Endangered: Climate or Freedom?* 2nd ed. s.l. Competitive Enterprise Institute.

Marcacci, S. 2011. *Was the Kyoto Protocol a Failure?* [online] The Energy Collective. Available at: http://theenergycollective.com/energynow/73306/was-kyoto-protocol-failure [Accessed 10 June 2012]

Martin, A. 2005. *Environmental Conflict Between Refugee and Host Communities.* Journal of Peace. [online] Available at: http://jpr.sagepub.com/content/42/3/329 [Accessed 8 December 2012]

Mcadam, J. 2012. *Climate Change, Forced Migration, and International Law*. New York: Oxford University Press

Mcadam, J. ed. 2010. *Climate Change and Displacement – Multidisciplinary Perspectives.* Oxford and Portland, OR: Hart Publishing and Hart Publishing Ltd.

Mehta, L. and Gupte, J. 2003. *Whose Needs are Right? Refugees, Oustees and the Challenges of Rights-Based Approaches in Forced Migration.* Brighton, Development Research Center on Migration, Globalization and Poverty – University of Sussex

MESAS (Multinational Environmental and Social Assessment Services) n.d. [online] Available at: http://www.his.com/~mesas/irr_model/irr_page_4%20four%20basic%20functions.htm [Accessed 05 December 2009]

Morrissey, J. 2012. *Rethinking the 'debate on environmental refugees': from maximalists and minimalists to "proponents and critics'.* Journal of Political Ecology, Vol. 19

Olson, M. 1971. *The Logic of Collective Action. Public Goods and the Theory of Groups.* Cambridge, MA. Harvard University Press

Organization of African Unity, *African Charter on Human and Peoples' Rights ("Banjul Charter")*, 27 June 1981, CAB/LEG/67/3 rev. 5, 21 I.L.M. 58 (1982), available at: http://www.unhcr.org/refworld/docid/3ae6b3630.html [Accessed 01 June 2012]

Organization of American States, 1998. *Additional Protocol to the American Convention on Human Rights in the Area of Economic, Social and Cultural Rights* [online] http://www.oas.org/juridico/english/treaties/a-52.html [Accessed 14 June 2012]

Raleigh, C. and Kniveton D. 2012. *Come rain or shine: An analysis of conflict and climate variability in East Africa*. Journal of Peace. [online] Available at: http://jpr.sagepub.com/content/49/1/51 [Accessed 6 December 2012]

Sachs, J. 2012. *Polluters Must Pay.* [online] Available at: http://www.project-syndicate.org/commentary/accountability-for-companies--environmental-damage-by-jeffrey-d--sachs [Accessed 6 December 2012]

Soroos, M. 1994. *Global Change, Environmental Security, and the Prisoner's Dilemma.* Journal of Peace. [online] Available at: http://jpr.sagepub.com/content/31/3/317 [Accessed on 28 December 2012]

Swain, A. 1996. *Displacing the Conflict: Environmental Destruction in Bangladesh and Ethnic Conflict in India*. [pdf] Available at www.jstor.org [Accessed 16 November 2007]

The Center for Women, the Earth, the Divine. 2007. [online] Available at: http://www.cwed.org/Summer2007.htm [Accessed 2 November 2008]

The Economist, 2009. *From renaissance leader to pariah.* [online] June 4. Available at: http://www.economist.com/node/13788581 [Accessed 2 June 2012]

The Office of the United Nations High Commissioner for Refugees. 2006. *The state of the world's refugees 2006: human displacement in the new millennium.* Oxford University Press

United Nations.1948. *The Universal Declaration of Human Rights.* [online] Available at: http://www.un.org/en/documents/udhr/ [Accessed on 10 May 2012]

United Nations, 1992. *Convention on Biological Diversity.* [online] Available at: http://www.un.org/millennium/law/xxvii-24.htm [Accessed on 11 June 2012]

United Nations, 1997. *United Nations Conference on Environment and Development*. [online] Available at: http://www.un.org/geninfo/bp/enviro.html/ [Accessed on 11 June 2012]

UN News Center. 2005. *2.3 million people in drought-stricken Eritrea need food aid – UN agency.* [online] Available at: http://www.un.org/apps/news/story.asp?NewsID=13068&Cr=Eritrea&Cr1= [Accessed 10 June 2012]

UN News Center. 2011. *2.3 million people in drought-stricken Eritrea need food aid – UN agency.* [online] Available at: http://www.un.org/apps/news/story.asp/html/www.fao.org/realfile/story.asp?NewsID=40628&Cr=eritrea&Cr1= [Accessed 10 June 2012]

UNEP International Environmental Technology Centre. 1998. *Source book of alternative for freshwater augmentation in some Asian countries.*

UNFCCC. 1992. Full text of the Convention. [online] Available at: http://unfccc.int/essential_background/convention/background/items/1353.php [Accessed on 12 June 2012]

UNHCR (The Office of the United Nations High Commissioner for Refugee), 2001. *UNHCR at 50: past, present and future of refugee assistance*. New York: Center for Migration Studies of New York.

UNHCR (The Office of the United Nations High Commissioner for Refugee), 2010. *Convention and Protocol Relating to the Status of Refugees*. [pdf] Geneva: UNHCR. Available at http://www.unhcr.org/protect/PROTECTION/3b66c2aa10.pdf [Accessed on 19 November 2009]

UNHRC, 2011. *A Year of Crisis. Global Trends 2011*. [online] Available: http://www.unhcr.org/pages/49c3646c4d6.html [Accessed on 20 November 2012]

University of Maryland, 2010. *Chronology for Muslims in India.* [online] July 16. Available at: http://www.cidcm.umd.edu/mar/chronology.asp?groupId=75008 [Accessed on 28 June 2012]

Walsham, M. for IOM, 2010. *Assessing the Evidence: Environment, Climate Change and Migration in Bangladesh.* [online] Available at: http://publications.iom.int/bookstore/free/environment_climate_change_bangladesh.pdf [Accessed on 10 April 2012]

Watts, G., 2010. Three Gorges dam may force relocation of a further 300,000 people. *The Guardian*, [online] 22 January. Available at: http://www.guardian.co.uk/environment/2010/jan/22/wave-tidal-hydropower-water [Accessed on 2 April 2011]

Westra L. 2009. *Environmental Justice and the Rights of Ecological Refugees.* s.l. Routledge

World Bank, 2012. *Bangladesh* [online] Available at: http://data.worldbank.org/country/bangladesh [Accessed on 2 June 2012]

http://www.dehai.org/conflict/goe/icc/icc_120800.htm [Accessed 2 November 2008]

World Meteorological Organization, 2012. *Press Release No. 966 - WMO Provisional Statement on the State of Global Climate in 2012* [online] Available at: http://www.wmo.int/pages/mediacentre/press_releases/documents/966_WMOstatement.pdf [Accessed 10 December 2012]

Young L., Hodgkinson, D. 2012 *"In The Face Of Looming Catastrophe": A Convention for Climate Change Displaced Persons*. [online] Available at: http://www.ccdpconvention.com/documents/Climate%20change%20displacement%20treaty%20proposal.pdf [Accessed 5 December 2012]